

CRPL-F 205 PART A

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PART A
IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

IONOSPHERIC DATA

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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

- M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

- Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

- a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer characteristic; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with CRPL-F188, Part A, issued April 1960, the count is given for foF2 in the tables of medians. It is regretted that space limitations prevent including detailed counts for other characteristics.

To indicate further in a general manner the relative reliability of the data, for the F2 layer, h'F or foEs, if the count is from five to nine, or, for all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is enclosed in parentheses. Medians are computed for less than five values for foF2 only.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

There is no indication on the graphs of the relative reliability of the observed data; it is necessary to consult the tables for such information.

The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

The latest available information follows concerning the smoothed observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1960.

Smoothed Observed Sunspot Number

[illegible]

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 143 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Meteorological Service, Province of Macau, Asia:
Macau

Commonwealth of Australia, Ionospheric Prediction Service of the
Commonwealth Observatory:
Brisbane, Australia
Townsville, Australia
Wilkes Station, Antarctica

Australian Department of National Development, Bureau of Mineral
Resources, Geology and Geophysics:
Mundaring, Western Australia

University of Graz:
Graz, Austria

Belgian Royal Meteorological Institute:
Dourbes, Belgium
Lwiro (Central African Institute for Scientific Research)

Escola Politecnica, University of Sao Paulo:
Sao Paulo, Brazil

British Department of Scientific and Industrial Research, Radio
Research Board:
Ibadan, Nigeria (University College of Ibadan)
Inverness, Scotland
Port Lockroy
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
Churchill, Canada
Ottawa, Canada
Resolute Bay, Canada
St. John's, Newfoundland
Winnipeg, Canada

Universidad de Concepcion:
Concepcion, Chile

Radio Wave Research Laboratories, National Taiwan University, Taipeh,
Formosa, China:
Formosa, China

Czechoslovak Academy of Sciences:
Pruhonice, Czechoslovakia

Danish National Committee of URSI:
Godhavn, Greenland

General Direction of Posts and Telegraphs, Helsinki, Finland:
Nurmijarvi, Finland

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

French National Center for Telecommunications Studies:
Dakar, French West Africa
Djibouti, French Somaliland
Kerguelen I.
Tananarive, Madagascar
Terre Adelie

Heinrich Hertz Institute, German Academy of Sciences, Berlin:
Juliusruh/Rügen, Germany

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover,
Germany:
Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Indian Council of Scientific and Industrial Research, Radio Research
Committee, New Delhi, India:
Ahmedabad (Physical Research Laboratory)
Bombay (All India Radio)
Calcutta (Institute of Radio Physics and Electronics)
Delhi (All India Radio)
Kodaikanal (India Meteorological Department)
Madras (All India Radio)
Tiruchy (All India Radio)
Trivandrum (All India Radio)

National Institute of Geophysics, City University, Rome, Italy:
Rome, Italy

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

General Directorate of Telecommunications, Mexico:
El Cerillo, Mexico

Christchurch Geophysical Observatory, New Zealand Department of
Scientific and Industrial Research:
Christchurch, New Zealand

Norwegian Defence Research Establishment, Kjeller per Lillestrom,
Norway:
Tromso, Norway

Manila Observatory:
Baguio, P. I.

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:
Kiruna, Sweden
Lycksele, Sweden
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
Lulea, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Sottens, Switzerland

National Bureau of Standards (Central Radio Propagation Laboratory):
Washington, D. C.

ERRATUM

F204(A), p. 39, Fig. 105: The graph of (M3000)F2 should be plotted 0.5 units higher at 00, 01, 22 and 23 hours local time.

TABULATIONS OF ELECTRON DENSITY DATA

Reduction of hourly ionospheric vertical soundings to electron density profiles has become a part of the systematic ionospheric data program of the Central Radio Propagation Laboratory, National Bureau of Standards. Scalings of ionograms for this purpose are being provided by ionosphere stations operated by several stations associated with CRPL. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. The very considerable task of scaling the ionograms for this purpose is being undertaken by T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station; the computations are performed at the NBS Boulder Laboratories by a group headed by J. W. Wright. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University, programmed by Dr. H. H. Howe for a CDC-1604 computer.

The tabulations provide the following basic electron density profile data for each hour of each day of the month:

<u>Quantity</u>	<u>Units</u>	<u>Remarks</u>
Electron Density (N)	$\times 10^3 = \text{electrons/cm}^3$	Body of table; given at each 10 km of height.
NMAX	$\times 10^3 = \text{electrons/cm}^3$	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
KP		The standard Kp magnetic index, to one digit.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
SCAT	Kilometers	One half of the half-thickness of the parabola best fitting the upper portion of the F region profile. Approximates the scale height near the level HMAX.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	$\times 10^{10} = \text{electrons/cm}^2$ column.	Obtained by integration of the profile between the limits HMIN and HMAX.

Tabulations of the average electron densities each hour, at each 10 km level, for the quiet ionosphere, are also given. These averages include the profiles obtained when the magnetic character figure Kp is 4+ or less. The number of profiles entering the average for each hour is given by CNT. The other parameters of the layer, HMIN, SCAT, HMAX, SHMAX, and the mean value of Kp are given for each hour.

Before the averaging process, the individual profiles are extrapolated above HMAX by a Chapman distribution of 100 km scale height. This assumed model seems to agree well with the few published measurements dealing with the topside profile of the F-region.* Extrapolation is necessary in order to calculate homogeneous averages near HMAX and the average profiles are, in fact, given up to 950 km. Also given are the average estimated integrated electron densities to infinity, SHINF (same units as SHMAX); this is an approximation to the total electron content in a column of the ionosphere.

*See Wright, J. W. "A Model of the F-Region Above HMAX F2" J. Geophys. Res. V.65, pp.185-191.

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 1 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	3	3	1	1		A3	B3					
HM1N	110	109	109	109	109			3	2	6	6	5
CCAT	38.0	54.2	48.4	60.3	44.4			35.2	36.4	41.7	35.3	39.3
HMAXF	286	303	287	315	309			261	365	494	386	373
SHMAX	1011	1114	851	1003	891			651	535	413	389	408
KM												
400										675		
390										673	714	
380										655	709	747
370										588	614	678
360										587	560	616
350										579	488	539
340										562	405	445
330										532	312	345
320				976						499	215	238
310		1212		974	1031					460	134	141
300		1211		960	1020					416	74.8	78.7
290	1350	1194	985	933	982					370	36.9	38.1
280	1350	1157	969	908	914					322		
270	1298	1106	954	840	831		1240			271		34.1
260	1193	1019	908	765	728		1240	225				
250	1057	907	842	676	613		1212	182				
240	895	784	747	583	508		1135	144				
230	719	657	634	496	424		1003	111				
220	566	546	521	422	361		805	83.5				
210	449	455	428	368	317		564	59.7				
200	377	388	364	328	284		360	12.4				
190	335	339	324	298	256							
180	308	305	299	272	230			140				
170	289	277	274	247	205			97.1				
160	270	247	245	222	180			72.1				
150	244	213	208	191	159			57.0				
140	215	191	183	168	141			46.9				
130	197	178	170	156	131			40.0				
120	159	168	164	150	126			35.8				
110	12.4	37.2	55.6	55.6	55.6			30.5				
100								19.7				

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 2 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O ₁ KP	A2	A2	1		1	A1	C1	C1		0	0	1
HMIN		109	110		109	108			218	238	263	247
SCAT		48.3	54.1		49.7	46.3			52.6	44.0	47.9	42.3
HMAXF		304	310		289	283			348	361	382	355
SMMAX		1112	1200		1113	784			398	322	317	290
K4												
39C											471	
380											471	
370										491	464	
160										491	446	467
350									539	484	418	465
540									536	464	379	452
330									523	431	330	424
320			1298						501	386	273	386
310		1292	1298						470	334	211	340
300		1291	1287						427	272	145	285
290		1267	1253		1477	1008			375	206	90.0	221
280		1216	1197		1466	1007			317	148	51.0	157
270		1139	1120		1425	989			251	97.6	25.0	99.9
260		1030	1013		1355	948			181	59.9		49.7
250		890	889		1255	882			122	34.1		19.9
240		730	746		1094	796			74.8	12.4		
230		588	613		908	686			39.5			
220		472	495		658	565			12.4			
210		388	410		465	449						
200		341	356		435	355						
190		312	323		289	280						
180		293	300		253	232						
170		278	277		228	199						
160		259	255		203	172						
150		232	225		180	145						
140		199	187		156	122						
130		173	167		134	111						
120		163	158		126	105						
110		41.7	12.4		41.7	63.3						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W												
3 MAY 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O ₃ KP	1	1	A1	A1	F1	1	B1	1	A1	A1	1	1
HMIN	238	210	217	211	231	226	93	108			109	108
SCAT	41.2	38.8	34.7	42.2	42.4	47.1	49.2	38.1			68.4	46.1
HMAXF	334	319	283	314	329	330	284	247			332	322
SHMAX	269	257	163	194	163	130	216	291			1021	1099
KM												
340	467										854	
330	466				271						854	1136
320	453	450		319	268	214					847	1135
310	425	445		318	258	212					831	1116
300	387	424		310	238	205					806	1062
290	338	388	374	291	215	194	284				768	995
280	274	340	374	266	184	176	284				727	911
270	199	279	362	235	148	150	278				675	817
260	117	216	334	198	107	118	267				617	714
250	56.0	142	290	154	64.7	83.8	250	448			552	609
240	16.5	86.9	216	101	34.6	48.3	224	444			487	516
230		52.5	104	58.2		21.8	188	426			432	440
220		28.7	32.2	29.9			150	393			386	386
210		1.1					115	338			349	347
200							85.6	273			321	322
190							64.9	214			298	304
180							51.7	163			276	288
170							42.6	129			255	271
160							36.8	106			232	249
150							33.4	91.2			213	225
140							30.2	81.1			179	204
130							26.8	71.6			149	170
120							23.4	63.8			134	152
110							19.3	47.5			38.1	88.0
100							12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W												
3 MAY 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O ₃ KP	1	1	1	1	1	0	80	80	0	0	0	0
HMIN	109	109	102	108	108	108			219	234	242	239
SCAT	48.7	49.0	58.9	43.0	51.0	50.7			49.7	43.9	37.3	35.5
HMAXF	321	317	323	297	300	300			304	339	342	341
SHMAX	1317	1435	1508	1162	1134	907			666	529	427	373
KM												
360												636
350												635
340										813	747	714
330	1484		1561							810	729	697
320	1484	1696	1560							779	684	650
310	1466	1687	1541							850	724	612
300	1418	1645	1500	1533	1398	1075				848	655	528
290	1340	1567	1437	1524	1386	1065				832	566	431
280	1225	1453	1350	1476	1346	1035				799	470	332
270	1070	1298	1243	1383	1279	986				747	367	226
260	902	1108	1101	1255	1187	909				680	256	128
250	748	904	948	1048	1062	821				598	159	65.1
240	615	711	783	860	894	709				505	84.3	30.0
230	502	553	630	669	689	587				408	43.0	
220	419	432	506	517	525	453				320	12.4	
210	364	369	409	399	406	363				238		
200	328	332	353	340	328	295				171		
190	307	309	319	306	280	246				125		
180	291	294	298	281	247	214				94.5		
170	275	278	280	260	223	188				73.9		
160	253	258	260	241	202	165				60.3		
150	223	230	234	222	181	145				50.9		
140	194	195	206	202	156	127				44.1		
130	171	171	177	168	138	111				39.6		
120	160	165	165	153	132	102				35.1		
110	59.7	49.2	56.4	93.7	51.4	59.0				28.5		
100										12.4		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W												
4 MAY 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O ₃ KP	0	0	1	1	1	1	B1	A1	A1	A1	A2	
HMIN	243	238	232	215	199	199	99	110			109	108
SCAT	42.9	37.4	35.4	29.1	41.2	50.1	40.8	46.6			39.9	63.6
HMAXF	348	326	314	276	274	309	261	256			244	332
SHMAX	364	284	260	183	166	115	154	329			399	979
KM												
350	610											
340	604										808	
330	582	564									808	
320	543	561	539								801	
310	489	539	537			162					785	
300	422	497	518			161					758	
290	333	432	478			156					718	
280	227	341	415	494	326	149					675	
270	132	230	331	488	325	138	197				623	
260	69.8	128	222	454	317	124	196	448			565	
250	32.5	59.2	118	390	298	107	193	446			507	
240		17.2	43.6	273	276	88.1	183	435			449	
230				124	224	70.2	167	414			513	
220				35.4	165	52.9	149	382			481	
210					74.3	34.7	130	336			434	
200					12.4	12.4	110	280			376	
190							91.3	217			296	
180							75.9	167			286	
170							63.6	133			276	
160							54.1	111			217	
150							46.8	98.0			190	
140							41.1	82.7			167	
130							37.6	65.0			141	
120							34.3	57.4			122	
110							28.5	45.0			41.7	
100							12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO								60 W				4 MAY 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300			
O ₃ KP	A2	A2	3	3	3	4	84	84	2	2	2	3			
HMIN	108		108	108	108	109		99	212	210	240	246			
SCAT	46.0		48.4	52.2	43.1	43.9		38.9	35.2	44.0	40.6	35.9			
HMAXF	335		326	313	306	313		321	299	331	353	359			
SHMAX	1152		1428	1404	1108	1030		838	582	583	434	384			
KM															
360											714	657			
350											713	647			
340	1179									911	696	604			
330	1176		1696					1298		911	657	553			
320	1149		1690	1712		1298		1298		895	596	490			
310	1093		1652	1710	1424	1297		1271		850	520	416			
300	1007		1577	1684	1417	1271		1200	1184	792	428	327			
290	914		1463	1627	1376	1211		1086	1163	715	338	238			
280	811		1309	1539	1293	1114		936	1094	618	248	156			
270	704		1116	1417	1179	998		775	976	507	160	90.5			
260	607		909	1239	1035	862		614	822	374	85.8	49.7			
250	522		716	1009	868	715		456	624	243	41.1	22.0			
240	445		550	760	695	568		317	382	137	3.1				
230	380		429	569	549	446		218	173	74.8					
220	340		363	428	426	353		151	52.1	37.7					
210	315		322	346	340	290		108		3.9					
200	298		297	307	290	248		81.4							
190	285		281	282	258	219		63.2							
180	275		267	265	236	195		43.2							
170	256		252	246	215	171		43.3							
160	226		231	219	193	150		37.4							
150	197		201	186	163	132		33.3							
140	180		174	165	141	116		30.5							
130	170		162	155	131	104		28.2							
120	165		153	146	125	99.3		25.7							
110	43.7		49.0	64.7	43.7	37.2		22.9							
100								124.9							

ELECTRON DENSITY

RAMEY	AFB, PUERTO RICO										60 W	5 MAY 1961			
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100			
0.KP	3	3	4	4	4	2	82	82	2	A2	A2	A5			
HMIN	248	248	209	199	248	287			113						
SCAT	40.4	32.8	30.8	50.9	45.1	44.0			67.4						
HMAXF	348	322	269	297	365	388			305						
SHMAX	402	320	287	218	163	156			692						
KM															
390						259									
380						257									
370						247	248								
360						247	232								
350	707					240	210								
340	700					228	180								
330	672	710				210	142								
320	621	710				184	101								
310	551	686				153	63.2		648						
300	460	629			338	123	36.7		647						
290	358	541			337	94.4	16.0		640						
280	248	419			329	67.7			625						
270	127	272	765	314	44.7				604						
260	60.8	130	749	292	27.3				570						
250	17.2	28.9	693	265	7.7				539						
240			589	227					509						
230			391	172					477						
220			132	104					440						
210			24.1	48.4					389						
200				12.4					294						
190									248						
180									208						
170									173						
160									145						
150									124						
140									107						
130									99.2						
120									57.6						

ELECTRON DENSITY

RAMEY	AFB, PUERTO RICO										60 W	5 MAY 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300			
0.KP	A5	A5	A4	A4	A4	A4	A4	A4	3	3	3	5			
HMIN	111								200	288	277	249			
SCAT	56.2								58.6	47.3	49.2	46.9			
HMAXF	347								361	407	393	343			
SHMAX	1409								300	220	232	236			
KM															
410											326				
400											324	340			
390											315	340			
380											299	334			
370											342	275	321		
360											342	244	301		
350	1417										339	205	273	383	
340	1412										331	161	238	383	
330	1386										318	121	197	376	
320	1337										300	84.8	151	360	
310	1262										278	55.1	107	335	
300	1172										253	32.2	69.1	303	
290	1055										224	12.4	40.5	257	
280	917										192		16.2	201	
270	772										158			142	
260	636										126			69.8	
250	513										96.4			12.4	
240	417										73.1				
230	355										53.7				
220	320										37.1				
210	301										23.3				
200	299														
190	277														
180	265														
170	244														
160	217														
150	193														
140	178														
130	170														
120	164														

ELECTRON DENSITY

RAMEY	AFB, PUERTO RICO										60 W	6 MAY 1961			
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100			
0.KP	5	5	5	5	5	5	85	A5	5	5	5	2			
HMIN	233	245	227	316	267	254	99	110	109	109	109	108			
SCAT	39.7	35.4	38.8	43.1	49.6	43.1	23.8	37.4	44.8	80.1	72.5	49.1			
HMAXF	333	341	320	414	386	357	241	235	247	292	329	318			
SHMAX	179	155	120	106	133	118	164	194	297	500	738	880			
KM															
420						179									
410						179									
400						174									
390						165	188								
380						151	187								
370						128	183								
360						103	175	192							
350		289				74.6	163	191							
340	309	289				51.1	148	184							
330	308	283				33.6	128	172							
320	300	265	215	17.2		106	156			539					
310	281	236	212			82.6	134			529	858				
300	255	200	202			60.2	108			517	828				
290	221	157	184			41.8	80.5			392	499	786			
280	179	114	160			27.2	56.4			390	478	726			
270	136	74.2	132			12.4	37.3			385	449	652			
260	88.4	43.8	99.4				21.0			377	416	551			
250	51.0	20.7	63.5					354	326	374	365	382	484		
240	25.0		37.1					354	326	372	350	352	433		
230			16.2					335	325	361	333	326	374		
220								285	314	340	316	307	335		
210								212	291	310	301	293	310		
200								143	254	271	288	283	294		
190								96.8	197	234	273	275	281		
180								71.6	122	203	236	265	268		
170								54.6	88.2	176	233	251	254		
160								45.1	75.2	149	207	233	238		
150								39.2	68.8	125	179	209	216		
140								35.6	65.3	110	156	183	190		
130								33.2	63.5	102	141	161	174		
120								30.4	60.9	98.6	131	151	165		
110								26.6	31.1	37.2	55.6	41.7	134		
100								12.4							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO						60 W				6 MAY 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0.KP	A2	A2	A4	A4	A4	4	84	84	4	4	4	3	
HMIN						109		99	239	219	219	261	
SCAT						49.8	62.3	55.4	38.9	38.5	37.0	44.9	
HMAXF						276	338	328	337	320	315	371	
SHMAX						475	453	553	395	386	326	343	
KM													
380												539	
370												539	
360												531	
350												509	
340												475	
330						539			714			426	
320						536	651	707				368	
310						527	648	678	710	621		300	
300						511	634	626	698	618		218	
290						490	610	550	663	595		148	
280						458	574	462	602	549		86.5	
270						529	417	529	358	517	482	38.3	
260						527	368	474	219	409	395		
250						515	311	409	115	297	293		
240						491	252	336	50.1	176	176		
230						458	197	264	12.4	89.4	86.2		
220						418	143	195		43.0	43.0		
210						370	89.4	145		12.4	12.4		
200						323	45.5	109					
190						286	12.4	83.3					
180						251		64.6					
170						219		51.2					
160						188		41.9					
150						158		35.7					
140						130		32.0					
130						112		29.9					
120						101		27.8					
110						95.4		25.6					
100						41.7		22.9					
								12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

7 MAY 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z FP	3	3	5	5	5	4	84	4	3	3	3	4
HMIN	241	236	233	200	207	240	99	110	108	112	112	107
SCAT	40.1	45.2	37.1	40.6	50.3	41.1	47.5	60.6	35.8	39.0	80.8	62.3
HMAXF	334	339	316	291	322	340	283	270	258	263	321	357
SHMAX	302	313	256	217	164	117	184	339	488	474	781	1201
KM												
360						195						985
350						195						982
340	541	510										967
330	540	505			235	192				591	940	
320	525	487	515		235	183				591	897	
310	493	457	511		232	169				588	846	
300	444	415	489	409	224	149				581	785	
290	383	359	440	409	212	125	236			569	716	
280	310	288	389	401	194	98.0	225			553	641	
270	220	207	317	381	169	71.1	221	356		583	531	564
260	118	129	192	349	143	47.3	212	354	740	582	506	495
250	42.4	62.4	98.9	300	115	28.2	198	347	732	567	479	435
240		23.1	36.1	240	85.4	1.1	178	334	694	531	450	387
230					160	56.4	156	317	630	481	420	353
220					71.7	34.4	132	296	524	419	390	329
210					12.4	15.8	108	272	409	360	361	314
200							86.1	247	319	319	330	304
190							69.0	218	259	291	301	293
180							55.7	186	221	267	275	277
170							45.4	153	194	242	249	261
160							38.0	127	168	216	216	244
150							32.9	105	140	179	181	221
140							29.7	91.3	119	150	159	183
130							27.1	82.3	108	130	149	166
120							24.9	69.0	104	123	144	158
110							22.5	12.4	74.1			120
100							12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

7 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z FP	4	4	2	A2	A2	A3	A3	A3	A2	2	2	2
HMIN	108	108	109						236	254	271	238
SCAT	49.6	37.5	43.9						34.1	40.1	41.5	38.9
HMAXF	316	287	279						345	368	365	341
SHMAX	1335	1111	915						364	366	365	353
KM												
360										613	639	
350										607	637	
340									630	582	619	621
330									627	539	581	621
320	1547								592	476	529	609
310	1542								544	404	456	576
300	1508								486	321	369	522
290	1443	1704							420	235	269	454
280	1349	1687	1229						342	156	158	373
270	1219	1612	1215						260	92.7	58.1	275
260	1058	1479	1169						179	50.3		179
250	873	1276	1091						104	23.6		102
240	696	979	976						56.1			53.8
230	645	694	870						22.2			16.8
220	677	488	665									
210	553	355	469									
200	318	310	359									
190	298	290	303									
180	286	274	278									
170	265	251	260									
160	239	200	235									
150	212	187	206									
140	191	178	183									
130	175	173	167									
120	167	167	160									
110	125	126	85.0									

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

8 MAY 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z FP	2	2	3	3	3	2	B2	B2	A2	2	B2	B2
HMIN	230	238	251	252	228	221	99			108	108	108
SCAT	36.0	37.7	40.0	40.2	43.8	40.2	40.9			74.2	89.3	53.3
HMAXF	322	324	341	335	321	300	263			297	339	317
SHMAX	308	272	258	254	273	221	273			685	1003	958
KM												
350			461									779
340			461	471								770
330	594	510	453	470	471					747		772
320	593	508	429	456	471					745		770
310	576	401	393	426	463	426				739	941	
300	535	456	346	384	443	426				727	937	
290	475	403	290	323	411	419				594	711	918
280	399	339	223	249	363	399				592	691	882
270	309	265	131	169	301	365	424			585	661	828
260	205	184	54.3	75.3	226	316	424			573	633	760
250	107	84.5			139	251	414			556	600	679
240	44.3	20.5			65.9	161	391			529	563	590
230	3.1				19.3	59.8	355			503	523	492
220							297			473	471	427
210							229			435	407	388
200							167			398	342	358
190							124			359	300	333
180							93.4			317	271	310
170							72.1			278	251	287
160							57.4			245	234	263
150							47.5			217	203	233
140							40.5			189	163	194
130							36.7			159	149	169
120							33.9			127	141	157
110							28.5			117	137	151
100							12.4			73.8	59.9	92.8

RAMEY AFB, PUERTO RICO

60 W

8 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z FP	2	B2	4	A4	4	3	B3	A3	1	A1	1	3
HMIN	108		108	108	109	110			248	253	248	251
SCAT	48.5		39.5	43.4	36.5	46.3			43.4	44.9	41.8	38.4
HMAXF	319		294	290	281	277			349	346	346	347
SHMAX	1107		1198	1214	939	805			467	440	408	431
KM												
350										779	772	710
340										770	768	707
330										740	748	685
320	1100									690	706	641
310	1090									618	649	581
300	1057									528	548	494
290	992	1712								414	429	390
280	921	1661	1651	1424	1121					298	297	279
270	835	1551	1584	1393	1113					177	145	164
260	740	1400	1466	1310	1081					77.1	47.8	72.6
250	646	1184	1321	1173	1016					19.3	20.5	53.7
240	559	928	1111	997	938							
230	485	698	849	791	824							
220	424	504	631	593	684							
210	375	382	462	444	513							
200	340	328	363	340	358							
190	315	296	309	282	263							
180	297	277	282	249	212							
170	284	265	266	228	181							
160	276	252	244	192	157							
150	263	227	213	157	132							
140	237	194	190	139	108							
130	207	168	168	127	95.7							
120	180	157	152	121	91.3							
110	127	45.8	61.1	59.7	12.4							

ELECTRON DENSITY

RAYEY AFB, PUERTO RICO	60 W										9 MAY 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
0, KP	A3	1	1	A1	A1	2	R2	R2	2	2	2	2		
SCAT		110	108		108	109		99	238	264	256	256		
HMAX		51.7	46.3		46.7	43.1		42.8	49.0	40.4	34.0	34.6		
CHMAX		136	306		287	278		220	350	360	341	349		
CHMAX		1267	1282		854	618		459	397	293	231	248		
FM														
360										517				
350									585	509	471	471		
340									579	485	471	464		
330									561	445	460	436		
320	1424								530	389	427	389		
310	1420	1635							408	321	375	333		
300	1392	1629						675	435	243	311	268		
290	1338	1589		1131		831		669	367	163	233	196		
280	1258	1511		1125	831			645	293	90.9	145	124		
270	1148	1440	1095	824				601	218	33.1	71.7	65.0		
260	1003	1224	1038	795				541	132		26.3	24.8		
250	727	1006	955	740				463	65.0					
240	670	785	841	676				377	19.3					
230	538	594	492	589				283						
220	423	450	530	486				196						
210	354	357	391	374				138						
200	317	308	300	285				100						
190	294	282	248	233				73.6						
180	279	267	221	198				52.5						
170	266	255	198	168				44.5						
160	252	242	167	142				37.0						
150	233	226	142	119				32.3						
140	208	199	128	102				29.1						
130	186	177	119	90.1				27.3						
120	174	167	115	84.3				25.5						
110	12.4	17.8	39.4	33.0				22.9						
100								12.4						

ELECTRON DENSITY

[illegible]

ELECTRON DENSITY

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0.4 P	A4	4		A4	4	A3	B3	4	A4	A4	A4	A4
SCAT	109	107	100		109		109	199		261	265	265
MMAXF	40.3	57.3	49.9		53.4		41.1	47.4		45.0	41.0	41.0
SHMAX	306	321	308		321		293	314		371	327	327
KM	1158	1262	1165		1055		815	563		561	513	
380											923	
370											923	
360											911	
350											875	
340											813	
330		1317			1126			819		736	985	
320		1316			1126					627	978	
310	1417	1305	1298		1115			818		485	943	
300	1408	1273	1295		1084		1298	801		313	875	
290	1358	1212	1256		1033		1297	766		192	787	
280	1259	1147	1197		965		1266	711		103	659	
270	1123	1042	1110		868		1197	645		42.3	468	
260	975	913	999		757		1089	567			189	
250	810	776	863		639		942	476			43.9	
240	658	644	721		527		768	382				
230	534	519	599		431		565	283				
220	440	423	496		361		381	173				
210	379	358	408		318		250	71.7				
200	340	320	369		280		161	12.4				
190	315	300	312		257		109					
180	299	286	287		237		79.7					
170	286	271	268		218		61.7					
160	269	251	252		198		50.3					
150	247	226	237		175		42.8					
140	221	203	214		152		38.2					
130	198	183	181		137		35.4					
120	176	170	167		127		33.2					
110	59.7	33.3	57.6		41.7		28.5					
100							12.4					

ELECTRON DENSITY

[illegible]

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 13 MAY 1961													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
Q _z KP	A5	A5	A3	F3	3	A3	B3	A3	A4	A4	A4	2	
HMIN	163	239	227	207	240	209		110	107				
SCAT	47.4	36.0	38.5	47.8	45.4	39.2		44.8	53.3				
HMAXF	338	327	312	302	322	279		270	303				
SHMAX	792	476	464	300	195	114		495	725				
KM													
340	941												801
330	946	941			342								801
320	908	932	936		341								801
310	855	889	936	450	336								894
300	790	806	914	450	322								894
290	707	703	861	443	299								894
280	617	576	774	427	271	242							894
270	530	410	631	399	228	239		645	590				894
260	444	192	467	366	174	228		637	552				894
250	372	67.7	241	330	86.1	209		613	510				894
240	313	12.4	93.6	290		178		573	465				894
230	266		26.0	740		121		517	420				894
220	229			164		58.5		440	376				894
210	201			42.2		12.4		361	340				894
200	179							287	314				894
190	156							239	295				894
180	122							207	278				894
170	99.4							176	261				894
160								156	239				894
150								125	214				894
140								102	191				894
130								93.8	162				894
120								88.7	151				894
110								12.4	80.0				894

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 13 MAY 1961													
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q _z KP	A7	A7	A7	A7	A7	A7	A7	A7	F3	A7	A7	4	
HMIN	178								207	241	219	231	246
SCAT	58.4								39.4	40.8	38.7	40.8	45.4
HMAXF	430								376	337	321	346	260
SHMAX	1137								680	609	585	601	528
KM													
370													801
360													801
350													801
340	1080												801
330	1080												801
320	1072												801
310	1048												801
300	1008												801
290	948												801
280	880												801
270	703												801
260	695												801
250	593												801
240	497												801
230	414												801
220	355												801
210	322												801
200	301												801
190	289												801
180	278												801
170	265												801
160	241												801
150	206												801
140	185												801
130	172												801
120	165												801
110	126												801

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 14 MAY 1961													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
Q _z KP	F4	A4	3	3	A3	A3	B3	B3	A2	A2	A2	1	
HMIN	263	249	229	216									
SCAT	45.0	36.2	58.0	35.4									
HMAXF	364	345	361	283									
SHMAX	442	441	619	299									
KM													
370	714		782										
360	712		782										
350	696	858	776										
340	662	854	758										
330	610	822	728										
320	547	757	685										
310	474	661	634										
300	375	541	575										
290	246	386	507	651									
280	119	227	419	650									
270	39.6	118	309	630									
260		55.1	199	583									
250		12.4	105	512									
240			46.2	415									
230			12.4	277									
220				84.9									
210													
200													
190													
180													
170													
160													
150													
140													
130													
120													
110													

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													
60 W 14 MAY 1961													
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q _z KP	1	A1	A1	1	1	A1	A1	A1	A1	0	0	0	
HMIN	108	109	109	107									
SCAT	50.3	46.3	46.1	38.8									
HMAXF	315	319	304	284									
SHMAX	1269	1413	1352	1059									
KM													
380													430
370													429
360													422
350													422
340													422
330													422
320	1411		1712										422
310	1406		1697	1792									422
300	1377		1643	1789									422
290	1320		1543	1751	1635								422
280	1236		1414	1671	1630								422
270	1121		1253	1549	1581								422
260	981		1035	1370	1479								422
250	829		824	1120	1318								422
240	682		647	856	1056								422
230	451		504	630	776								422
220	445		402	462	659								422
210	374		343	365	392								422
200	331		310	311	305								422
190	304		290	282	261								422
180	287		274	263	240								422
170	275		262	252	225								422
160	258		249	240	209								422
150	231		227	224	192								422
140	200		196	193	173								422
130	176		171	168	141								422
120	166		160	151	129								422
110	81.4		59.7	39.4	107								422

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 15 MAY 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q ₁ KP	0	0	0	0	0	1	B1	B1	1	A1	A1	A1
HMIN	266	248	219	229	228	199			108			
SCAT	40.1	42.3	33.4	36.0	35.4	30.5			48.5			
HMAXF	362	340	296	318	305	264			249			
SHMAX	339	258	179	157	147	111			328			
KM												
370	414											
360	414											
350	405	450										
340	379	450										
330	348	444										
320	305	425		297								
310	251	394		294	296							
300	190	349	392	278	294							
290	124	290	389	251	282							
280	61.2	222	370	216	258							
270	23.8	145	333	176	223	281						
260	67.1	276	179	174	280							
250	18.4	205	82.0	111	266			405				
240		115	61.8	54.7	247			401				
230		54.3	12.4	17.2	182			389				
220		12.4			108			368				
210					53.7			339				
200					12.4			302				
190								263				
180								227				
170								196				
160								167				
150								133				
140								102				
130								87.9				
120								81.4				
110								75.3				

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 15 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q ₁ KP	1	1	2	A2	A2	A2	A2	B2	A4	4	4	5
HMIN	108	109	108						219	227	217	260
SCAT	66.8	49.5	49.6						33.0	41.3	46.2	36.2
HMAXF	348	342	337						317	334	339	364
SHMAX	1186	1259	1456						615	656	635	478
KM												
370											850	
360											847	
350	976	1234									817	
340	973	1234	1605							1126	941	751
330	959	1215	1596							1123	932	669
320	934	1172	1557							1201	1092	902
310	898	1101	1481							1189	1024	846
300	852	1011	1379							1114	931	776
290	792	907	1218							1010	804	688
280	725	798	1069							880	650	580
270	651	692	890							709	477	465
260	574	596	724							516	302	353
250	505	508	646							314	150	239
240	443	436	476							153	69.5	138
230	390	384	398							60.7	23.7	64.7
220	351	347	346							12.4		20.7
210	323	320	313									
200	304	300	290									
190	292	288	272									
180	281	277	262									
170	268	265	257									
160	252	251	243									
150	229	234	231									
140	196	205	205									
130	173	183	176									
120	162	173	162									
110	73.8	38.1	59.9									

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 16 MAY 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q ₁ KP	5	5	5	5	5	3	B3	3	4	A4	A4	4
HMIN	256	232	200	248	271	227	114	109	108	110	108	109
SCAT	41.2	40.4	24.6	60.7	50.3	44.6	131	40.6	51.5	88.6	103	83.7
HMAXF	369	315	243	388	383	342	394	256	242	315	321	345
SHMAX	479	517	225	238	186	129	296	249	250	450	655	786
KM												
400							169					
390				278	269		169					
380				276	269		168					
370	782			272	264		167					
360	773			263	255		166					
350	740			249	239	196	164				515	
340	683			235	220	196	162				514	
330	609			217	195	192	159			426	510	
320	520	1022		195	164	184	156			288	426	503
310	413	1018		169	129	171	152			288	425	491
300	305	986		141	93.0	153	148			286	422	477
290	213	921		111	57.0	130	143			282	416	456
280	124	826		78.6	29.9	106	137			277	409	435
270	66.1	669		51.3		82.5	131			268	400	409
260	25.6	445		31.0		60.2	125	346		258	378	381
250		228	779	12.4		42.0	117	344	296	249	368	353
240		66.7	777			27.2	108	333	296	242	359	330
230			728			12.4	98.6	311	292	236	347	312
220							88.4	274	282	234	332	296
210							77.6	222	267	231	314	286
200							66.7	175	246	228	295	280
190							56.5	147	219	225	279	274
180							47.4	129	194	217	265	267
170							39.2	112	172	207	251	260
160							33.1	97.0	147	195	237	247
150							29.0	83.9	121	179	220	221
140							26.6	73.9	103	146	198	171
130							25.2	67.9	95.7	121	169	156
120							22.6	64.7	91.9	113	142	150
110							25.1	71.2	12.4	119	57.6	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 16 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q ₁ KP	4	4	3	3	3	A3	A3	B3	A3	3	3	2
HMIN	106	107	108	109	108	110	108		210	228	253	272
SCAT	99.3	53.5	42.2	40.2	41.1	52.6	52.2		46.3	42.1	49.5	38.5
HMAXF	389	338	309	284	267	291	296		329	341	375	368
SHMAX	1468	1267	1141	985	702	567	593		432	344	353	264
KM												
390	941										512	
380	939										511	471
370	932										500	466
360	920										554	479
350	904										554	466
340	883	1281									651	545
330	855	1273									645	521
320	825	1243									624	480
310	790	1190	1470								585	425
300	747	1116	1453			610	681				537	358
290	696	1015	1394	1491		610	679				472	290
280	638	902	1294	1487		604	665				398	221
270	576	769	1152	1444	1022	586	638				315	147
260	511	633	972	1359	1016	556	598				229	86.7
250	449	513	765	1215	981	518	548				146	45.3
240	396	427	585	977	916	469	492				80.3	16.8
230	356	365	437	707	815	411	422				39.7	
220	326	324	354	476	662	353	351				3.9	
210	306	297	307	341	499	301	285					
200	290	282	281	287	362	258	228					
190	280	274	267	263	285	227	185					
180	272	266	257	249	245	203	184					
170	264	259	249	238	226	182	130					
160	252	246	239	223	206	160	111					
150	231	223	219	196	184	139	94.4					
140	199	193	188	164	155	122	81.2					
130	177	170	162	149	134	107	72.1					</

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 17 MAY 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z KP	2	2	1	1	1	2	B2	2	A3	3	A3	A2
HMIN	250	230	211	228	202	229	114	109	108	107		
SCAT	38.7	36.9	40.1	42.3	39.6	45.5	33.9	34.0	47.4	50.3		
HMAXF	344	319	305	318	280	322	260	245	264	268		
SHMAX	263	253	237	214	153	114	153	257	366	457		
KM												
350	485											
340	483											
330	468											
320	435	491		374			186					
310	390	485	426	371			183					
300	329	460	424	357			175					
290	255	417	411	332	303	163						
280	162	353	383	299	303	145						
270	89.3	277	346	254	298	123	266		428	512		
260	40.5	195	293	199	281	97.7	266		427	509		
250	3.1	108	230	130	258	69.8	260	392	419	496		
240		44.7	154	65.2	224	41.5	241	390	400	473		
230		3.1	78.0	18.4	169	12.4	214	373	373	440		
220			37.2		97.0		165	338	337	390		
210					39.5		121	292	301	374		
200							83.0	245	265	287		
190							62.4	203	233	256		
180							48.6	166	201	231		
170							39.6	134	168	204		
160							34.1	113	132	174		
150							30.9	92.0	114	152		
140							29.2	74.3	106	139		
130							27.8	67.3	101	131		
120							24.2	59.6	92.4	126		
110								22.0	38.1	113		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 17 MAY 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z KP	A2	A2	A0	A0	A0	A1	A1	B1	A1	1	1	1
HMIN									199	246	259	237
SCAT									52.2	49.5	41.3	39.2
HMAXF									328	371	369	342
SHMAX									518	429	373	350
KM												
340										613		
330										613	610	
320										606	602	
310										586	577	619
300										552	532	618
290										669	509	473
280										665	453	402
270										650	384	331
260										618	310	250
250										580	229	159
240										533	153	90.3
230										482	90.7	4.3
220										420	49.7	12.4
210										354	21.9	44.1
200										286		16.2
190										209		
180										128		
170										59.1		
160										12.4		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 18 MAY 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z KP	1	1	1	1	1	1	81	1	1	A1	1	0
HMIN	253	239	212	209	219	211	114	105	109	108	107	109
SCAT	52.5	46.6	40.2	38.6	37.7	37.3	38.8	41.5	59.2	43.5	50.4	45.6
HMAXF	367	348	311	300	306	289	246	217	250	277	285	286
SHMAX	447	411	338	255	198	171	193	198	334	479	569	636
KM												
370	648											
360	645											
350	631	645										
340	605	640										
330	568	621										
320	519	586	607									
310	453	538	607		392							
300	371	474	596	471	389							
290	271	398	565	464	374	358				539	675	
280	166	313	517	440	344	353				478	538	672
270	81.8	199	445	401	297	335				475	528	655
260	34.7	102	358	345	233	305				358	460	507
250		44.5	259	271	153	254	374			358	429	475
240		12.4	161	199	84.6	183	372			355	394	434
230			78.8	129	43.6	96.0	358			347	356	391
220			35.8	63.1	12.4	42.3	333	319	334	324	355	375
210								287	317	314	298	325
200								211	306	293	280	303
190								112	286	270	267	285
180								57.7	255	246	255	272
170								38.7	205	222	239	258
160								29.6	150	200	222	241
150								25.5	116	177	202	222
140								23.4	89.9	140	170	202
130								22.0	77.8	112	135	158
120								20.1	72.1	103	126	145
110									53.2	33.3	80.1	89.2

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 18 MAY 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z KP	0	0	0	0	0	0	A0	B0	2	2	2	2
HMIN	110	108	109	108	106	108	109		210	238	249	263
SCAT	62.3	65.4	51.1	50.5	53.3	45.0	36.5		59.0	46.2	40.4	35.6
HMAXF	322	337	314	314	328	320	294		339	361	357	360
SHMAX	882	1186	1079	969	1102	1062	882		521	414	383	358
KM												
370										621		681
360										621	651	681
350										612	646	667
340			1027							648	588	623
330		747	1024			1126				644	548	577
320		747	1009	1157	1027	1120	1335			631	498	518
310		740	983	1156	1025	1094	1319			609	434	439
300		724	945	1136	1007	1049	1269	1561		576	358	351
290		698	895	1095	969	983	1183	1556		537	276	254
280		659	831	1032	907	901	1079	1502		486	187	162
270		617	758	946	835	803	934	1384		426	116	90.4
260		563	676	836	740	695	775	1222		356	70.3	44.9
250		504	592	713	627	586	618	781		284	39.3	12.4
240		446	512	588	525	477	479	698		212	12.4	
230		395	442	472	434	388	363	444		135		
220		356	385	390	365	330	290	252		65.6		
210		327	342	337	317	293	246	179		4		
200		310	314	304	288	270	222	146				
190		297	296	284	272	255	205	120				
180		291	283	274	261	245	189	85.9				
170		284	275	264	247	238	173	69.4				
160		268	263	251	228	226	154	62.3				
150		236	241	234	204	202	129	58.4				
140		202	203	215	178	175	110	55.6				
130		180	175	183	155	147	99.6	53.7				
120		169	165	165	146	135	94.9	52.5				
110		12.4	59.0	56.4	99.6	122	35.4	30.3				

ELECTRON DENSITY

RAMFAY AFB, PUERTO RICO

60 W

19 MAY 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q ₁ P	2	2	2				2		2			
HMIN	24.9	21.9	21.5	22.6	22.9	22.9		A2	110	C2	A2	A2
SCAT	39.2	40.7	35.2	46.7	33.7	41.5			75.0			
HMAXF	34.7	32.1	30.1	33.0	31.0	31.9			28.2			
SHMAX	41.7	37.2	30.7	28.3	20.6	20.4			55.2			
KM												
350	744											
340	737											
330	708	681		46.9								
320	652	681		46.4	44.0	37.3						
310	57.9	67.0	62.1	44.9	44.0	36.8						
300	48.6	63.8	62.1	42.4	43.0	35.2						
290	37.9	58.6	60.6	38.4	39.9	32.5			53.4			
280	25.7	50.7	56.5	32.2	35.2	28.6			53.4			
270	13.4	40.1	50.1	24.9	28.4	23.5			53.1			
260	61.3	25.9	40.8	16.9	20.1	16.4			52.3			
250	12.4	15.0	30.2	97.5	10.9	93.3			51.0			
240		82.4	19.4	45.3	45.5	43.0			49.2			
230		41.8	89.7	18.8	17.4	12.4			47.1			
220		12.4	31.7						44.2			
210									40.1			
200									34.7			
190									29.0			
180									24.6			
170									21.0			
160									18.0			
150									15.2			
140									12.8			
130									11.4			
120									10.5			
110									12.4			

ELECTRON DENSITY

RAMEY AFR, PUERTO RICO

60 W

19 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
CHRP	A2	A2	S2	A2	A2	3	R3	R3	3	3	3	3
HMIN					108	108	108	112	202	208	247	291
SCAT					51.2	55.1	46.6	48.8	42.0	43.9	52.5	42.7
HMAXF					328	334	327	328	302	306	375	402
SHMAX					1209	1241	1050	996	761	516	472	340
KM												
410												559
400												559
390												548
380											648	522
370											646	480
360											635	421
350											611	353
340											574	278
330					1287	1273	1360	1417			529	188
320					1279	1254	1353	1407			473	116
310					1247	1214	1316	1368	1391	858	400	69.4
300					1190	1149	1248	1293	1391	854	317	34.9
290					1108	1071	1148	1199	1365	831	233	
280					1009	978	1023	1067	1296	785	154	
270					895	876	877	885	1195	717	90.9	
260					763	767	701	682	1034	629	47.1	
250					635	658	540	495	824	525	19.3	
240					525	551	406	332	547	406		
230					433	456	305	205	282	248		
220					365	375	235	132	117	97.2		
210					321	313	293	90.9	40.2	26.7		
200					292	270	167	57.2				
190					270	239	144	53.1				
180					251	214	124	43.8				
170					229	191	106	37.1				
160					204	166	90.8	33.0				
150					179	141	77.4	30.9				
140					160	120	67.7	29.6				
130					147	107	62.8	28.8				
120					139	101	60.3	26.5				
110					73.8	59.0	31.6					

ELECTRON DENSITY

RAMEY AFB. PUERTO RICO

60 W

20 MAY 1961

TIMF	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,K,P		4	4		4	2	82		2	2	2	2
H,M,J,N	246	230	232	280	248	199		109	108	109	106	107
S,C,A,T	36.2	37.3	43.2	37.9	38.9	31.0		50.3	52.7	66.8	63.7	70.4
HMAX,F	335	318	349	373	341	274		259	261	290	307	354.0
SHMAX	372	346	360	290	342	264		313	433	624	867	1253
FM												
380				541								
370				541								
360				526								980
350			567	492	633							979
340	747		561	440	633							970
330	744		539	369	619							951
320	717	681	507	288	581							921
310	659	674	451	201	529					779	879	
300	574	644	385	112	449					776	832	
290	455	587	317	50.9	359					765	775	
280	324	505	248	1.7	252	633				574	744	709
270	171	402	173		139	631			510	565	711	639
260	77.1	273	106		64.2	602		409	510	548	673	504
250	28.7	134	60.8		18.4	540		406	504	524	623	504
240		54.3	31.5			438		395	489	496	566	446
230		1.7				302		375	465	469	506	402
220						149		348	431	441	447	368
210						58.7		30.8	381	387	394	362
200						12.4		252	320	324	352	323
190								202	268	293	320	307
180								165	231	265	295	295
170								134	202	237	275	283
160								107	179	207	253	267
150								82.0	155	179	223	243
140								67.5	126	152	197	206
130								61.0	104	138	163	169
120								57.9	97.1	131	149	158
110								23.7	66.6	33.1	83.7	51.9

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

20 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QKP	2	2	2	2		A1	A1	A1	A1	A1	A1	
HWP	106	108	107	107	107				241	223	260	252
SCAT	50.8	37.6	53.9	53.8	50.9				43.0	49.0	50.4	43.1
HMAXF	329	317	330	312	311				348	357	365	358
SHMAXF	1240	1175	1398	1390	1232				728	790	677	569
KM												
370										1022		
360										1121	1019	971
350									1157	1114	1000	963
340									1147	1095	959	930
330	1740		1464						1107	1028	898	869
320	1230	1444	1452	1620	1464				1031	957	821	785
310	1197	1431	1416	1619	1463				941	865	718	671
300	1139	1357	1349	1598	1446				831	758	586	524
290	1054	1254	1267	1550	1399				699	623	437	346
280	965	1114	1150	1474	1324				547	466	245	197
270	864	958	1015	1368	1220				372	320	87.0	89.9
260	758	793	868	1218	1070				202	201		38.5
250	656	638	715	1024	888				67.6	124		
240	563	517	583	807	718					66.6		
230	480	426	473	616	559					30.5		
220	415	373	398	463	422							
210	368	344	348	371	346							
200	335	325	318	325	301							
190	312	310	300	297	274							
180	296	293	285	280	256							
170	275	270	272	262	234							
160	246	238	257	243	219							
150	214	207	229	225	198							
140	161	189	195	203	169							
130	147	178	169	170	144							
120	141	172	160	153	134							
110	137	69.4	130	82.7	104							

ELECTRON DENSITY

60 W

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q, KP		1							3	1		2
HMIN	106	104			106				207	219	239	231
SCAT	59.0	53.6			47.9				49.8	39.3	38.6	41.8
HMAXF	335	327			322				331	336	339	338
SHMAX	1245	1340			1414				882	673	565	545
KM												
340	1121								1298	1131	1031	941
330	1118	1360			1776				1298	1124	1016	931
320	1102	1355			1775				1283	1084	966	895
310	1069	1327			1746				1241	1004	880	829
300	1015	1276			1678				1170	899	772	742
290	953	1197			1564				1079	765	628	623
280	890	1104			1426				951	621	456	482
270	798	990			1231				804	476	278	329
260	707	863			1004				641	313	130	173
250	620	738			802				427	188	57.6	82.9
240	543	620			588				248	92.5	12.4	39.1
230	473	517			430				128	46.8		
220	414	434			341				64.2	12.4		
210	370	378			300				20.7			
200	337	340			274							
190	315	318			250							
180	300	302			231							
170	286	291			213							
160	265	279			182							
150	231	248			140							
140	191	204			123							
130	160	175			114							
120	154	161			108							
110	137	65.6			99.6							

ELECTRON DENSITY

60 W

[illegible]

ELECTRON DENSITY

RAMEY AER. PUERTO RICO

60 W

23 MAY 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
CHP		4	2		2		A3			A4	R4	4
HM1N	25.9	22.9	22.2	24.8	24.0	19.9	11.5	10.8		10.9	10.6	10.7
SCAT	35.9	29.8	41.8	48.6	41.8	49.4	46.0	39.0		46.0	51.4	67.8
HMAXF	35.7	30.4	32.5	36.4	32.4	29.4	28.1	27.3		28.4	31.9	34.8
SUMAX	56.7	50.3	44.4	49.6	43.7	42.6	37.4	52.6		65.7	99.2	133.9
3M												
370				74.7								
360	103.1			74.6								
350	102.3			73.2								
340	09.4			70.2								
330	91.2		77.2	65.5	78.2							
320	80.8		76.9	59.7	78.1						94.1	103.4
310	6.70	118.4	74.6	51.6	76.2						93.5	99.6
300	50.1	115.7	69.9	41.6	72.1						91.4	94.1
290	32.3	106.2	63.9	31.2	65.7	6.65	5.91			7.79	8.77	8.85
280	16.2	90.2	54.3	20.1	56.6	6.52	5.91	7.68		7.77	8.22	8.23
270	61.7	6.93	4.0	10.2	45.0	6.26	5.83	7.67		7.61	7.59	7.52
260	12.4	4.52	30.4	50.6	32.0	58.4	56.1	74.7		7.26	6.79	6.74
250		1.97	17.0	17.4	16.4	5.35	5.27	7.00		6.74	5.87	5.91
240		67.9	85.4		61.1	4.73	4.73	7.31		5.96	5.05	5.13
230		21.7	36.6			3.84	3.99	5.19		5.05	4.34	4.54
220						3.63	3.90	4.9		4.08	3.82	4.05
210						1.12	1.15	3.16		3.36	3.47	3.78
200						24.1	10.2	24.6		2.95	3.22	3.53
190							58.4	20.5		2.67	3.06	3.32
180							40.9	1.75		2.47	2.52	3.12
170							33.9	1.50		2.24	2.36	2.92
160							30.5	1.28		2.04	2.57	2.71
150							20.5	1.10		1.72	2.34	2.46
140							27.5	94.5		1.51	2.02	2.25
130							26.6	81.0		1.37	1.79	1.97
120							25.0	74.4		1.31	1.66	1.77
110								38.6		36.1	1.13	1.11

ELECTRON DENSITY

PAMEY AFB, PUERTO RICO

60 W

23 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QKFP	A4	A4	A3	A3	A3	A1	A1	A1	A3	A3	3	2
HM1N					110	106			250	269	270	241
SCAT					39.2	58.0			50.5	37.9	47.9	44.1
HMAXF					288	315			356	360	369	359
SHMAY					982	985			661	543	618	656
KM												
370										999	985	
360									476	999	977	1031
350									972	980	948	1022
340									950	920	897	986
330									909	839	826	922
320						1031			847	735	719	834
310						1030			774	610	592	722
300						1015			678	448	455	592
290					1417	984			557	255	283	447
280					1401	936			410	82.7	114	315
270					1340	877			254	12.4	12.4	201
260					1231	805			102			102
250					1083	723			12.4			40.7
240					870	422						
230					655	506						
220					485	402						
210					355	328						
200					295	274						
190					262	239						
180					245	214						
170					232	192						
160					218	171						
150					189	150						
140					162	127						
130					147	110						
120					136	102						
110					19.7	78.8						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

24 MAY 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q, KP		2	2	2	2	1	81		2	2		A2
HMIN	236	212	216	232	247	227		109	109	109	108	
SCAT	43.4	32.2	50.2	35.1	46.9	44.1		67.8	49.8	54.5	44.3	
HMAXF	146	294	322	312	344	313		288	284	277	278	
SHMAX	592	383	385	223	224	222		510	632	611	673	
KM												
350	976				358							
340	972				357							
330	945		594		350							
320	888		593	471	334	407						
310	812		585	471	311	406						
300	709	858	566	458	278	398						
290	583	854	534	425	236	379		529	714			
280	435	816	490	374	187	350		527	713	651	779	
270	276	734	422	303	132	304		519	700	648	773	
260	156	620	342	204	69.5	233		506	674	634	747	
250	69.9	452	255	104	24.0	142		486	630	610	700	
240	26.3	260	55	39.1	2	68.7		461	577	572	677	
230		115	74.6			23.7		431	510	529	552	
220		43.6	27.8					394	439	480	467	
210								346	371	425	390	
200								284	314	363	341	
190								215	271	312	310	
180								163	239	276	289	
170								134	214	245	271	
160								112	190	215	251	
150								93.6	166	188	223	
140								80.7	143	166	189	
130								73.1	122	137	162	
120								68.8	111	125	151	
110								24.5	39.4	29.7	59.9	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

24 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OKAP	A2	A2		1		A2	A2	B2	A2	4		25
MIN			110	109	108				249	260	244	263
SCAT			51.4	50.3	50.6				50.8	45.2	46.7	48.7
HMAXF			320	313	314				352	374	357	370
SHMAX			1163	1042	993				708	626	658	732
KM												
380									985	985		1080
370										983		1080
360									1008	960	1022	1067
350									1007	913	1017	1032
340									993	841	989	971
330			1212						959	751	932	894
320			1212	1126	1121				902	637	863	793
310			1199	1124	1119				831	503	779	676
300			1164	1106	1099				733	354	664	541
290			1101	1065	957				618	213	516	380
280			1024	1002	992				503	109	343	226
270			919	916	906				370	44.4	185	106
260			806	809	787				237	3.1	83.0	38.7
250			689	687	643				129		33.9	
240			578	562	515				60.1			
230			481	462	406				12.4			
220			402	385	334							
210			353	332	290							
200			322	301	266							
190			304	283	250							
180			292	271	237							
170			283	258	223							
160			267	246	209							
150			232	224	195							
140			194	198	175							
130			175	172	151							
120			164	158	138							
110			12.4	39.4	40.4							

ELECTRON DENSITY

RAMFY AFR, PUERTO RICO 60 W 25 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q ₁ FP	4	4		A4	A4	2	2	B2	A4	4	4	1
H ₁ FP	107	107	108		106	107	109		229	249	240	242
ΣCAT	50.4	49.4	48.2		49.5	54.3	52.6		56.1	37.6	41.3	46.5
H ₁ MS	154	332	331		332	325	335		364	350	346	353
H ₁ MAX	1335	1410	1329		1098	1091	955		617	422	459	482
RM												
370									775			
360	1263								774			744
350	1261								774			743
340	1740	1477	1493		1147		1080		740	735	178	730
330	1124	1477	1490		1146	1173	1077		700	646	751	700
320	1120	1456	1470		1128	1171	1057		656	630	701	652
310	1035	1405	1417		1088	1152	1017		597	549	631	591
300	939	1318	1262		1022	1113	953		531	462	543	515
290	827	1214	1216		941	1052	880		458	360	425	421
280	712	1089	1080		850	975	792		375	236	308	301
270	605	974	916		747	883	695		284	127	156	260
260	492	807	740		630	775	587		198	592	101	99.4
250	425	673	583		517	653	473		117	124.4	41.8	39.1
240	374	557	450		421	535	366		54.1		3.1	
230	339	463	360		350	426	285		12.4			
220	316	397	318		303	342	228					
210	300	351	296		277	285	190					
200	290	322	288		262	248	163					
190	282	306	278		249	223	141					
180	278	295	273		236	205	121					
170	273	281	255		220	188	104					
160	264	261	229		207	168	89.8					
150	248	249	201		179	147	77.5					
140	230	225	180		155	127	66.9					
130	202	193	167		137	112	67.6					
120	184	177	160		128	105	57.4					
110	137	140	123		114	87.3	35.1					

ELECTRON DENSITY

RAMEY AF8, PUERTO RICO 60 W 26 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q ₁ KP	A1	A1	A1	A1	A1	A1	A1	R6	2	2	2	2
HMIN		108	106	108			108	96	235	230	243	259
SCAT		52.3	45.1	45.6			53.4	61.0	54.2	55.8	46.2	51.2
HMAXF		332	321	302			309	391	361	354	343	372
SHMAX		1106	1072	972			990	851	679	651	475	533
KM												
380												779
370									941			779
360										894		768
350										932		743
340		1055						936	907	880	778	702
330		1055	1157					936	866	853	763	648
320		1052	1157					928	809	810	731	576
310		1009	1141	1179		1229	907	733	756	680	491	
300		952	1096	1178		1220	874	634	679	609	388	
290		886	1021	1157		1189	827	502	586	509	271	
280		810	930	1107		1137	770	388	472	392	135	
270		719	828	1029		1064	701	251	338	265	55.1	
260		621	719	925		963	623	137	194	131	12.4	
250		526	609	925		840	538	70.2	95.1	46.3		
240		443	503	649		701	449	28.6	40.2			
230		382	412	502		545	352			3.1		
220		344	356	391		388	260					
210		318	321	325		274	184					
200		302	298	288		206	125					
190		291	284	267		166	83.6					
180		282	265	252		140	55.2					
170		272	251	236		119	40.7					
160		256	227	217		101	35.2					
150		233	203	193		86.9	33.0					
140		199	181	164		77.9	31.6					
130		180	166	150		72.0	29.8					
120		171	158	143		68.6	27.3					
110		134	119	51.0		43.7	23.0					
100							12.4					

ELECTRON DENSITY

NAME	AFB	PUERT	PICO	60 W								27 MAY 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300			
G,KP	A1	A1	0	A0		A0	A1	A1	A1	A1	A1	A1			
HMN		109	108	108					221	239	254	237			
SCAT		44.4	50.4	40.3					42.4	37.4	39.8	40.7			
HMAXF		322	320	306					331	324	340	330			
SHMAX		1411	1565	1246					692	586	609	616			
KM															
340									1184		1173				
330		1712	1851						1184	1179	1156	1126			
320		1711	1851						1163	1175	1102	1110			
310		1682	1831	1712					1110	1136	1012	1059			
300		1610	1775	1701					1024	1054	88	930			
290		1494	1681	1642					902	928	690	861			
280		1340	1553	1526					753	760	458	710			
270		1143	1374	1367					568	518	215	520			
260		930	1165	1159					342	257	50.1	268			
250		729	938	924					182	92.9		103			
240		570	725	690					85.8	22.0		25.5			
230		456	555	512					38.3						
220		380	431	392											
210		339	361	334											
200		314	322	301											
190		296	298	278											
180		287	282	259											
170		275	269	241											
160		261	260	205											
150		239	234	176											
140		214	200	159											
130		185	176	150											
120		167	164	145											
110		41.7	59.0	81.2											

ELECTRON DENSITY

PAMEY AFB, PUERTO RICO					60 W					28 MAY 1961				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
Q ₁ KP	A3	3	A3		A3	A3	A3	A3	1	A1	A1	3		
HMIN		106	108		109			97	199	209	254	258		
SCAT		46.6	46.8		40.7			48.0	47.5	46.6	47.9	48.1		
HMAXF		323	329		310			287	332	337	366	366		
SHMAX		1419	1465		1418			906	630	517	472	458		
KM														
370											714	-701		
360											711	698		
350											695	681		
340									898	779	663	646		
330		1635	1712						898	774	616	602		
320		1633	1695						885	752	552	547		
310		1601	1640		2116				852	709	473	469		
300		1532	1541		2084				796	654	385	380		
290		1427	1413		1989			1411	728	582	284	268		
280		1286	1246		1826			1404	643	487	177	147		
270		1125	1052		1606			1369	549	374	86.4	64.7		
260		951	860		1274			1303	448	260	32.9	18.4		
250		776	676		941			1206	328	175				
240		622	533		651			1064	251	112				
230		498	430		444			847	140	68.2				
220		409	365		333			621	81.1	38.8				
210		357	325		282			409	41.8	12.4				
200		324	300		256			228	12.4					
190		303	283		238			115						
180		286	271		224			47.7						
170		268	261		208			38.0						
160		248	250		187			35.6						
150		222	225		160			34.3						
140		189	187		140			32.8						
130		168	163		127			31.1						
120		159	153		119			28.1						
110		81.6	82.3		81.7			26.1						
100								12.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 29 MAY 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
CHOP	A1	A1				A1	A1	1	B1	A1	1	1
HMIN			107	109		109			219	249	250	231
SCAT			37.8	60.8		55.1			41.3	35.8	34.7	35.7
HMAXF			287	316		328			321	338	337	325
SHMAXF			921	945		978			489	424	393	357
1400												
1300						1031			819	809	779	681
1200				RR2		1026			819	769	734	678
1100				880		1005			805	693	672	651
1000				867		966			767	603	586	594
2900			1190	842		918			704	492	463	521
2800			1181	804		810			627	349	320	439
2700			1120	757		746			593	194	174	324
2600			1041	695		638			452	83.9	68.4	212
2500			934	624		530			295	22.0		110
2400			806	551		433			173			44.6
2300			665	480		355			70.8			
2200			535	418		300			12.4			
2100			427	370		261						
2000			351	332		217						
1900			312	307		217						
1800			289	276		202						
1700			273	252		184						
1600			254	229		162						
1500			227	199		138						
1400			204	165		119						
1300			179	150		106						
1200			159	143		99.7						
1100			82.7	39.4		33.0						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 30 MAY 1961

[illegible]

ELECTRON DENSITY

31 MAY 1961

[illegible]

[illegible]

TABLES OF IONOSPHERIC DATA

APRIL 1961 - JANUARY 1955

Table 1

Washington, D. C. (38.7° N, 77.1° W)							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		4.35	28	290			2.82
01		4.2	29	285			2.85
02		3.8	29	285			2.85
03		3.6	28	275			2.85
04		3.2	27	280			2.90
05		3.0	29	275			3.00
06	---	4.4	30	250	---	(125) 1.80	3.20
07	320	5.55	30	235	---	115 2.40	2.5
08	300	6.0	29	220	4.3	111 2.80	2.9
09	330	6.2	29	210	4.4	109 3.08	>3.1
10	320	6.6	28	205	4.6	109 3.25	3.4
11	330	6.95	28	200	4.7	109 3.35	2.95
12	335	7.05	28	200	4.8	109 3.35	2.85
13	325	7.3	29	210	4.8	107 3.38	2.95
14	320	7.3	29	220	4.7	107 3.35	2.95
15	310	7.45	30	220	4.5	109 3.20	3.00
16	300	7.25	30	230	4.3	111 2.90	3.00
17	290	7.25	30	235	---	111 2.55	3.10
18	260	7.3	30	250	125	1.95	>1.9
19		6.95	30	240			3.05
20		6.5	28	240			3.00
21		5.65	28	250			2.95
22		5.0	27	270			2.85
23		4.6	25	285			2.80

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Washington, D. C. (38.7° N, 77.1° W)							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		4.4	31	275			2.85
01		4.2	30	275			2.85
02		3.8	29	275			2.85
03		3.45	30	270			2.90
04		3.2	29	270			2.90
05		3.05	30	270			2.90
06		3.1	30	260			3.08
07	(250)	5.2	31	240	---	119 2.00	3.30
08	245	6.3	31	225	---	109 2.50	2.5
09	270	6.7	31	215	---	109 2.85	2.9
10	280	7.5	31	205	4.3	105 3.10	3.12
11	295	7.9	31	205	4.5	105 3.25	3.10
12	295	8.2	31	210	4.6	105 3.30	3.05
13	290	8.6	31	205	4.5	105 3.30	3.10
14	290	8.3	31	215	4.4	107 3.20	3.10
15	275	7.8	31	220	---	109 3.10	3.10
16	265	7.9	31	225	---	109 2.80	3.10
17	250	7.55	30	235	---	115 2.30	3.18
18		7.2	30	240	129	1.75	>1.7
19		6.7	30	230			3.05
20		6.15	30	240			3.00
21		5.5	30	260			2.90
22		5.1	28	265			2.90
23		4.8	27	270			2.88

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Resolute Bay, Canada (74.7° N, 94.9° W)							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3.5	22	275			---
01		3.4	24	<280			---
02		3.5	23	280			---
03		3.2	20	280			---
04		3.5	24	260			---
05		3.3	19	270			---
06		3.6	20	<275			---
07		3.3	18	270			---
08		3.8	24	260			---
09		4.2	25	270			---
10		4.5	25	270			---
11		4.6	23	250	2.1		---
12		5.0	25	250			(3.1)
13		5.3	23	250			---
14		5.2	24	260		2.0	---
15		4.8	24	255			---
16		4.8	22	250			---
17		4.3	22	260		2.3	---
18		4.6	24	260			---
19		4.2	20	255		2.1	---
20		3.5	21	280		3.2	---
21		3.4	21	280			---
22		3.9	25	280			---
23		3.4	20	270			---

Time: 90.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 4

Tromsø, Norway (69.7° N, 19.0° E)							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(2.7)	1	---			3.6
01		(2.6)	2	---			3.7
02		(3.0)	3	(305)			4.0
03		(2.6)	5	(295)			3.0
04		(2.5)	7	(295)			2.6
05		(2.3)	9	295			1.8
06		(2.4)	13	270			1.5
07		2.8	18	255			3.05
08		4.0	19	250	120	1.35	3.10
09		5.1	20	245	110	1.70	3.10
10	(240)	5.8	20	245	130	1.85	3.10
11	245	6.2	21	(240)	120	2.10	3.10
12	245	6.4	25	(245)	110	2.05	3.10
13	240	6.3	25	(250)	115	2.10	3.20
14	(245)	6.2	19	240	140	2.00	3.10
15		5.8	21	245			2.3
16		4.6	19	240		1.65	2.1
17		(4.8)	15	240			2.8
18		(4.0)	10	260			3.0
19		(3.7)	5	---			3.2
20		(3.4)	4	---			3.5
21		(3.0)	2	---			4.2
22		(2.6)	2	---			4.2
23		---	0	---			4.4

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 5

Kiruna, Sweden (67.8° N, 20.3° E)							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(2.2)	4	335			3.4
01		(2.0)	2	300			3.6
02		(2.8)	4	310			4.0
03		(2.2)	7	310			3.0
04		2.3	14	290			2.75
05		2.1	11	290			2.8
06		2.2	12	275			2.8
07		2.8	21	260	---		3.0
08		4.0	22	250	---	1.40	3.1
09		5.3	24	245	---	1.60	3.1
10	---	5.8	26	240	---	2.00	3.15
11	---	6.2	26	235	---	2.10	3.1
12	---	6.3	27	240	---	2.10	3.1
13	---	6.4	27	240	---	2.15	3.2
14	---	6.2	25	235	---	1.85	3.2
15		6.0	20	240	---	1.70	3.2
16		4.4	15	230	---		3.2
17		5.1	11	240	---		3.0
18	(4.0)	8	240				(3.0)
19	(2.6)	4	255			2.5	---
20	(2.8)	4	290			2.8	---
21	(2.6)	3	290			3.0	---
22	(2.6)	6	320			3.3	---
23	(2.4)	4	330			3.2	---

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 6

Sodankylä, Finland (67.4° N, 26.6° E)							
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(3.6)	2	345			2.5
01		(3.3)	1	350			2.4
02		(4.7)	1	340			2.3
03		(4.1)	1	330			3.0
04		---	0	320			2.2
05		---	0	310			2.2
06		---	0	305			
07		(3.0)	3	295	---	E	---
08		3.6	12	260	---	E	3.00
09		4.7	21	250	---	1.60	3.20
10		5.7	27	245	125	2.05	3.20
11		6.4	24	240	130	2.10	3.20
12		6.8	24	240	130	2.20	3.20
13		7.0	24	240	135	2.20	3.20
14		6.8	24	235	(140)	2.15	3.20
15		6.6	20	230	135	2.10	3.15
16		6.4	13	240	160	1.70	3.20
17		5.8	10	230	---	E	(3.20)
18		(5.2)	6	240	---	E	2.2
19		(4.8)	5	250	---	---	2.2
20		(4.0)	1	260			2.4
21		(3.2)	2	300			2.3
22		(3.5)	2	315			2.3
23		(3.4)	2	350			2.9

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 7

Lulea, Sweden (65.6° N, 22.1° E)									
February 1961									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(2,8) 9	300					(2,7)	
01		(2,7) 9	330					(2,75)	
02		(2,8) 9	305					(2,8)	
03		2,2 10	300					(2,8)	
04		2,1 11	290					(2,8)	
05		(2,4) 11	(270)					(2,95)	
06		(2,6) 8	(270)					(2,95)	
07		2,9 17	255		---	---		3,05	
08		4,4 18	240		140	2,0		3,2	
09		5,8 17	245		138	2,0		3,2	
10		6,7 19	240		---	2,2		3,2	
11		6,9 20	240		138	2,3		3,3	
12		7,0 18	240		140	2,4		3,3	
13		6,9 20	235		140	2,3		3,3	
14		7,0 19	240		140	2,0		3,25	
15		6,5 20	235		---	1,8		3,2	
16		5,7 19	230		---	---		3,2	
17		5,0 17	235					3,2	
18		3,8 18	240					3,15	
19		3,4 18	240					3,2	
20		3,0 15	260					2,9	
21		2,5 13	280					(2,9)	
22		(2,3) 7	300					(2,8)	
23		(2,5) 11	(300)					(2,8)	

Time: 15,0°E.

Sweep: 0,65 Mc to 25,0 Mc in 5 minutes, automatic operation.

Table 9

Nurmijarvi, Finland (60.5° N, 24.6° E)									
February 1961									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		---	0						
01		(2,5) 1						----	
02		---	0						
03		---	0						
04		(2,5) 2						----	
05		(1,9) 2						----	
06		(1,8) 2						----	
07		(2,9) 3						----	
08		3,6 10						3,20	
09		5,4 20				2,00		3,40	
10		6,0 24		---		2,30		3,40	
11		6,7 23		---		2,50		3,40	
12		7,0 21		---		---		3,40	
13		7,5 21		---		2,45		3,40	
14		7,7 23		---		---		3,40	
15		7,3 19		---		---		3,40	
16		7,0 21		---		2,10		3,40	
17		6,3 16		---		---		3,40	
18		(5,2) 7						(3,25)	
19		(5,1) 9						(3,20)	
20		(3,3) 5						(3,10)	
21		(2,6) 2						----	
22		(2,5) 2						----	
23		---	0					----	

Time: 30,0°E.

Sweep: 1,0 Mc to 25,0 Mc in 1 minute.

Table 11

Churchill, Canada (58.8° N, 94.2° W)									
February 1961									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		2,9 13	(310)				5,0		
01		3,0 16	310				4,6	----	
02		3,1 15	350				4,5	----	
03		3,0 16	330				4,0		
04		2,9 12	---				4,1	----	
05		3,1 11	---				4,0		
06		3,3 10	(325)				4,2	----	
07		3,3 13	(300)				3,7	(3,1)	
08		4,3 18	270			2,2	3,2	3,15	
09		5,1 21	280	---		2,3		3,2	
10		5,5 21	265	---		2,6		3,2	
11	(315)	6,0 24	270	---		2,7		3,1	
12	305	6,0 26	230		3,8	2,8		3,1	
13	300	6,6 27	230		3,7	2,8		3,1	
14	290	6,9 27	240		3,7	2,6		3,1	
15	280	7,2 25	250	---		2,5		3,1	
16	---	6,6 26	250			2,3		3,15	
17		6,3 25	250			1,8		3,2	
18		4,6 25	270				2,3	(3,1)	
19		4,3 23	325				3,6	(2,95)	
20		3,8 23	310				4,0	(3,0)	
21		3,7 20	300				4,4	----	
22		3,4 18	330				4,6	----	
23		3,2 16	300				5,2	----	

Time: 90,0°W.

Sweep: 1,0 Mc to 17,0 Mc in 16 seconds.

Table 8

Lycksele, Sweden (64.6° N, 18.8° E)									
February 1961									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		2,5 26	310				2,5	2,6	
01		2,4 25	300				3,0	2,6	
02		2,4 26	300				2,2	2,6	
03		2,2 26	285				2,2	2,6	
04		(2,2) 26	280				2,2	(2,6)	
05		2,0 24	265				2,2	2,7	
06		2,1 23	260				2,2	2,7	
07		2,6 27	260				1,40	2,6	
08		4,1 27	240			---	1,60	3,1	
09	---	5,2 28	230		---	110	1,90	3,0	
10	---	6,0 28	230		3,3	110	2,10	3,0	
11	---	6,1 28	230		---	105	2,20	2,9	
12	---	6,6 27	220		---	105	2,30	3,0	
13	---	6,8 27	230		---	105	2,20	3,0	
14	---	6,5 27	230		---	115	2,00	2,8	
15		6,4 28	230			---	1,90	3,0	
16		5,7 26	220			115	1,70	3,0	
17		4,8 25	225			---	1,35	2,3	
18		4,3 24	230			---	----	2,4	
19		3,8 23	235					2,4	
20		3,0 26	245					2,6	
21		2,9 23	260					2,4	
22		(2,5) 25	290					2,4	(2,6)
23		(2,6) 27	290					2,6	2,6

Time: 15,0°E.

Sweep: 0,33 Mc to 20,0 Mc in 3 minutes.

Table 10

Uppsala, Sweden (59.8° N, 17.6° E)									
February 1961									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		2,1 21	275				2,3	2,80	
01		2,0 20	280				3,0	2,70	
02		1,6 24	280				2,4	2,70	
03		1,6 27	265				3,0	2,70	
04		1,6 27	275				2,4	2,80	
05		1,7 27	260				3,2	2,90	
06		1,8 26	250				2,3	2,90	
07		3,0 28	245			(110)	1,40	3,0	
08		4,8 28	230			110	1,75	3,1	
09	---	5,8 28	230		---	(110)	2,10	4,0	
10	---	6,3 28	215		---	105	2,35	3,5	
11	---	7,0 28	215		---	105	2,45	4,0	
12	---	7,5 28	215		---	(105)	2,50	4,3	
13	---	7,5 28	215		---	(105)	2,50	4,0	
14	---	7,7 28	220			<120	2,40	4,4	
15		7,4 28	220			<120	2,20	3,5	
16		6,8 28	210			<125	1,80	3,2	
17		5,8 28	210			(115)	1,40	2,4	
18		5,0 27	215			---	----	2,3	
19		4,0 26	230			---	----	2,1	
20		3,4 23	240					2,2	
21		2,9 23	245					2,2	
22		2,5 21	260					2,2	
23		2,3 21	280					2,2	

Time: 15,0°E.

Sweep: 0,33 Mc to 20,0 Mc in 3 minutes.

Table 12

Inverness, Scotland (57.4° N, 4.2° W)									
February 1961									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		2,4 20						(2,70)	
01		>2,2 22						(2,70)	
02		(2,0) 20						(2,60)	
03		(1,8) 21						(2,70)	
04		>1,7 19						(2,70)	
05		1,8 17						(2,85)	
06		1,9 16						(2,90)	
07		2,1 23						(2,90)	
08		4,2 24						3,10	
09		5,6 24						3,20	
10		6,6 24						3,20	
11		>6,8 22						3,20	
12		7,2 24						3,20	
13		7,6 24						3,20	
14		7,6 25						3,20	
15		7,5 26						3,20	
16		6,8 26						3,20	
17		6,6 26						3,20	
18		(5,5) 26						3,10	
19		(4,9) 25						3,05	
20		(4,0) 22						3,00	
21		(3,0) 22						(2,90)	
22		(2,6) 20						(2,80)	
23		>2,3 20						(2,75)	

Time: 0,0°.

Sweep: 0,67 Mc to 25,0 Mc in 5 minutes, automatic operation.

Table 13

Slough, England (51.5° N, 0.6° W) February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3,3	27	280			<1.2 2,80
01		3,3	28	275			<0.9 2,75
02		3,2	26	275			<0.8 2,75
03		3,0	27	280			<0.9 2,85
04		2,5	28	275			<0.9 2,80
05		2,4	26	250			<1.1 2,90
06		2,4	27	<255			<1.6 3,00
07		3,4	26	240	---	1.50	<1.6 3,20
08		5,6	27	225	110	1.90	3,40
09		6,6	26	215	110	2.35	2,4 3,45
10		7,2	28	220	110	2.65	2,8 3,40
11		7,7	27	210	105	2,80	3,40
12		8,2	26	215	110	2,90	3,45
13		7,9	27	210	110	2,90	3,40
14		8,0	28	210	110	2,75	3,40
15		7,9	27	225	115	2,55	3,40
16		7,4	27	230	<120	2,20	3,45
17		6,8	26	225	---	1,80	3,40
18		6,0	28	220			<1.6 3,20
19		5,3	28	220			<1.6 3,20
20		4,5	27	245			<1.6 3,05
21		3,8	27	250			<1.6 2,95
22		3,6	27	<265			<1.6 2,90
23		3,6	28	<270			<1.6 2,90

Time: 0.0°.

Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 15

St. John's, Newfoundland (47.6° N, 52.7° W) February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		2,6	19	<300			2,8
01		2,4	22	300			2,9
02		2,4	20	300			2,9
03		2,2	24	300			2,9
04		2,2	22	<300			3,0
05		2,1	22	290			3,0
06		2,2	22	<280			3,1
07		4,3	27	235			3,3
08	---	5,8	28	230		2,50	3,3
09	---	6,4	28	215	---	2,70	3,3
10	(285)	6,7	28	215	---	3,00	3,2
11	(280)	7,6	28	210	---	3,05	3,2
12	(280)	7,5	28	220	---	3,00	3,2
13	(290)	7,6	28	220	---	3,00	3,2
14	(300)	7,8	28	225		2,70	3,2
15		7,6	28	240		2,60	3,2
16		7,0	28	230		---	3,1
17		6,4	18	230			3,1
18		5,9	24	235			3,0
19		5,0	21	245			3,0
20		4,2	20	260			3,0
21		3,6	18	275			2,9
22		3,2	19	290			2,9
23		3,0	20	<290			(2,8)

Time: 60.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 17

Sottens, Switzerland (46.6° N, 6.7° E) February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3,8	26	270			2,85
01		3,8	26	270			2,85
02		3,8	26	280			2,8
03		3,6	24	280			2,8
04		3,6	25	280			2,8
05		3,5	25	270			2,95
06		3,1	23	250			3,0
07		3,2	24	240			3,0
08	(230)	5,1	25	230	2,0	135 2,00	3,4
09		230	6,8	25	220	2,7 110 2,30	3,4
10		240	7,0	25	220	3,2 110 2,70	3,45
11		240	7,4	26	220	3,5 110 2,90	3,4
12		240	8,0	26	220	3,9 100 3,00	3,35
13		240	7,9	25	210	3,8 110 3,00	3,35
14		240	7,7	26	210	3,9 110 2,95	3,4
15		240	7,9	24	200	3,3 110 2,80	3,3
16		240	7,8	26	230	3,0 110 2,60	3,4
17	---	7,0	25	220	---	130 2,10	3,5
18		6,0	26	220		---	3,3
19		5,4	26	230			3,2
20		4,9	25	240			3,1
21		4,4	26	250			3,1
22		3,8	26	260			3,0
23		3,9	25	270			2,9

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 14

Winnipeg, Canada (49.9° N, 97.4° W) February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		2,4	24	300			(3,1)
01		2,2	25	(310)			(3,0)
02		2,1	20	325			(3,0)
03		2,6	18	<320			---
04		2,6	17	305			---
05		2,5	13	(315)			---
06		2,6	10	(295)			---
07		2,6	15	290			---
08		4,1	19	250		2,0	3,3
09		5,2	26	235	---		2,3
10	(280)	5,8	25	220	---		2,6
11	290	6,6	25	220	4,0		2,8
12	300	7,0	28	220	4,1		2,9
13	290	7,0	28	220	4,1		2,9
14	275	7,6	28	220	4,0		2,9
15	270	7,5	28	230	4,0		2,8
16	245	7,4	28	230	---		2,5
17	---	7,1	27	235	---		2,2
18		6,6	26	230		---	3,2
19		5,6	26	225			3,1
20		4,3	26	240			3,15
21		3,4	28	250			3,15
22		2,8	26	270			3,05
23		2,6	24	270			3,05

Time: 90.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 16

Graz, Austria (47.1° N, 15.5° E) February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(3,5)	20	305			
01		(3,4)	21	300			
02		3,6	20	305			
03		3,5	19	300			
04		3,5	19	300			
05		>3,1	18	270			
06		3,2	19	(275)			
07		>4,7	22	240			
08		>6,5	20	240			
09		7,8	20	230			
10		7,8	19	230		(2,8)	
11		8,2	20	230		3,0	
12		8,3	20	230		(3,0)	
13		8,4	21	230		3,0	
14		8,2	20	220		(2,9)	
15		8,1	19	230			
16		>8,0	18	240			
17		>6,6	18	230			
18		(5,8)	20	240			
19		5,0	19	240			
20		(4,5)	13	265			
21		>3,2	18	275			
22		>3,1	18	(290)			
23		(3,3)	19	<310			

Time: Local.

Sweep: 2.0 Mc to 18.0 Mc in 50 seconds.

Table 18

Ottawa, Canada (45.4° N, 75.9° W) February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3,0	26	290			---
01		2,8	26	300			(2,95)
02		2,5	26	300			---
03		2,5	26	320			(3,0)
04		2,4	22	315			---
05		2,4	22	300			(3,1)
06		2,2	21	315			---
07		3,4	27	270		1,6	(3,1)
08		5,2	28	240		2,0	3,3
09	260	6,0	28	220	(3,7)	2,7	3,3
10	280	7,0	28	210	(4,0)	2,9	3,3
11	270	7,5	28	210	4,2	3,0	3,25
12	270	7,6	28	210	4,3	3,0	3,2
13	275	8,0	28	210	4,1	3,0	3,2
14	270	8,2	28	215	4,0	3,0	3,2
15	260	8,0	28	220	---	2,8	3,2
16	250	7,7	27	240	---	2,5	3,2
17		7,4	28	240		2,0	3,2
18		6,8	27	230		---	3,2
19		5,8	27	230			3,2
20		5,0	27	240			3,1
21		4,2	27	260			(3,1)
22		3,7	27	270			(3,0)
23		3,2	26	280			---

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 19

Wakkanai, Japan (45.4° N, 141.7° E)							
February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3.8 26 310			----		2.80
01		3.8 26 300			----		2.85
02		3.8 25 300			----		2.90
03		3.8 24 270					2.90
04		3.7 24 260					3.00
05		3.3 25 265					2.95
06		3.2 25 260					3.10
07	---	5.4 27 230	---	---	----		3.35
08	---	7.2 26 225	---	---		2.50	3.35
09	---	7.6 25 230	---	---		2.65	3.30
10	---	8.5 25 225	---	---		2.95	3.30
11	(265)	9.2 25 235		(4.2)		3.00	3.30
12	(255)	8.9 25 230		(4.2)		3.10	3.30
13	(245)	7.8 25 225	---	---		3.00	3.35
14	---	0.0 25 230	---	---		2.85	3.35
15		7.6 25 235				2.50	3.40
16		7.0 25 230				2.10	3.40
17		6.2 26 225					3.35
18		5.4 26 230					3.25
19		4.5 26 250					3.20
20		4.0 26 270					3.00
21		4.0 26 300					2.90
22		3.7 27 310					2.85
23		3.9 27 315					2.85

Time: 135.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 1 minute.

Table 21

Akita, Japan (39.7° N, 140.1° E)							
February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3.8 23 290					2.75
01		3.9 24 290					2.85
02		3.8 24 290					2.90
03		3.8 24 280					2.90
04		3.6 26 250					3.00
05		3.3 27 260					2.85
06		3.5 28 260					3.00
07		5.8 28 245				1.95	3.40
08	---	7.4 28 240	---	---		2.45	3.45
09	245	8.3 28 240	---	---		2.90	3.40
10	250	8.8 28 225		4.1		3.10	3.35
11	255	9.1 28 225	---	---		3.20	3.30
12	255	9.2 28 230	---	---		3.25	3.30
13	250	8.6 28 220	---	---		3.20	3.40
14	250	8.0 28 220	---	---		3.05	3.40
15	245	7.8 28 240	---	---		2.80	3.40
16	---	7.4 28 240				2.30	3.40
17		6.3 27 220					3.35
18		5.1 27 230					3.20
19		4.8 24 245					3.10
20		4.4 20 245					3.00
21		4.0 18 260					3.00
22		3.9 21 295					2.80
23		3.9 22 295					2.80

Time: 135.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 23

Yamagawa, Japan (31.2° N, 130.6° E)							
February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3.8 27 300					2.80
01		3.8 27 295					2.85
02		3.7 27 270					2.90
03		3.5 27 260					2.95
04		3.5 26 250					3.05
05		3.1 26 290					2.90
06		2.8 26 300					2.75
07		4.3 27 250					3.20
08		(7.6) 26 240				2.30	(3.45)
09		8.5 27 235				2.80	3.40
10	(260)	9.4 28 230				3.15	3.30
11	260	10.2 28 230		4.8		3.30	3.25
12	270	10.6 28 225		4.8		3.45	3.20
13	270	10.8 28 220		(4.9)		3.45	3.20
14	270	10.5 27 230	---	---		3.40	3.15
15	(250)	9.7 27 225	---	---		3.20	3.25
16	---	(8.9) 26 230				2.90	(3.20)
17		8.6 27 240				2.30	3.30
18		7.5 26 230					3.30
19		6.0 27 240					3.10
20		5.6 27 250					3.05
21	(5.1)	27 250				(3.00)	3.00
22	(4.2)	26 260				(2.85)	3.10
23		4.1 27 295					2.75

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 20

Rome, Italy (41.8° N, 12.5° E)							
February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		4.0 26 270					2.90
01		4.1 26 280					2.90
02		4.0 25 260					2.90
03		4.0 26 280					2.90
04		3.9 26 270					2.95
05		3.7 25 260					3.05
06		3.3 25 240					3.15
07		(4.6) 25 240					(3.25)
08	---	(6.6) 23 220	---	---	120	1.6	2.1
09	---	(8.0) 25 220	---	---	110	2.6	(3.40)
10	---	8.2 23 220	---	---	110	2.9	3.35
11	---	(8.4) 26 210	---	---	110	3.0	(3.35)
12	---	8.7 25 200	---	---	110	3.2	3.40
13	---	8.6 27 210	---	---	110	3.2	3.35
14	---	8.3 25 210	---	---	110	3.0	3.35
15	---	8.6 26 210	---	---	110	2.8	3.35
16		8.2 25 220			110	2.5	3.35
17		(7.0) 17 220			130	2.1	3.40
18		5.7 19 210					3.15
19		5.4 26 230					3.10
20		4.8 27 240					3.10
21		4.3 27 250					3.00
22		4.3 23 260					3.00
23		3.9 23 270					2.90

Time: 15.0°E.

Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 22

Tokyo, Japan (35.7° N, 139.5° E)							
February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3.7 25 305					2.75
01		3.7 26 300					2.80
02		3.7 26 290					2.80
03		3.6 26 270					2.90
04		3.3 26 255					2.90
05		3.2 26 300					2.80
06		3.2 26 <295					2.85
07		(6.0) 26 240				(2.15)	(3.25)
08	---	7.6 26 235	---	---		2.50	3.35
09	250	9.0 28 230	---	---		2.90	3.35
10	255	9.0 28 230	---	---		3.15	3.25
11	255	9.6 28 230	---	---		(3.25)	3.25
12	260	9.6 27 225	---	---		(3.30)	3.25
13	255	9.2 27 220		(4.4)		3.25	3.25
14	255	8.2 27 225	---	---		(3.10)	3.25
15	250	7.9 27 235				2.90	3.25
16	(250)	7.4 27 240				(2.35)	3.30
17		6.8 28 225					3.30
18		5.0 27 230					3.15
19		4.9 27 250					3.00
20		4.5 27 250					3.05
21		3.9 27 265					2.90
22		3.8 25 305					2.80
23		3.8 25 305					2.80

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 24

Formosa, China (25.0° N, 121.5° E)							
February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		5.3 27 275					2.85
01		4.8 27 265					2.95
02		4.3 26 265					3.00
03		4.0 26 245					3.20
04		3.2 25 240					3.25
05		2.7 24 (280)					2.90
06		(3.0) 25 <310					(2.80)
07		6.4 28 240					3.35
08	---	8.4 28 240				(117) ----	3.30
09	260	9.5 28 230				115 (3.05)	3.2
10	275	11.2 27 230				113 (3.35)	3.6
11	275	11.7 27 220		(4.80)		(113) ----	3.8
12	290	13.0 27 210				(113) ----	3.6
13	290	14.0 28 210				(115) ----	3.6
14	275	14.0 28 215				(113) (3.40)	3.4
15	270	14.2 28 220				115 (3.20)	3.2
16	260	14.8 28 230				115 (2.80)	3.10
17		14.2 28 235					3.20
18		12.5 28 215					3.20
19	>10.0	28 220					(3.10)
20	>9.7	28 220					(3.05)
21	>9.0	28 230					3.15
22	7.7	27 230					3.10
23	6.3	27 255					2.90

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 25

El Cerillo, Mexico (19.3° N, 99.5° W) February 1961								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.4 25	260					3.05
01		3.4 27	250				2.0	3.10
02		3.3 27	240				1.8	3.10
03		3.4 26	235					3.30
04		2.9 23	220					3.30
05		2.8 25	270				1.7	3.00
06		2.7 25	300					2.80
07		3.8 24	265				1.8	3.05
08	(220)	6.8 25	220	2.4	111	2.25		3.40
09		7.8 28	220		101	2.80		3.30
10		9.0 28	215		101	3.20	3.6	3.10
11		10.3 28	210		101	3.40	3.8	3.20
12		10.9 28	210		101	3.60	4.0	3.20
13		10.7 28	205		101	3.60	3.8	3.10
14		11.0 28	210		101	3.50	3.9	3.10
15		11.4 28	215		101	3.40	3.7	3.20
16		11.0 28	220		101	3.20	3.6	3.20
17		10.1 28	230		101	2.70	3.3	3.30
18		6.9 28	220		111	2.00	2.8	3.40
19		6.8 28	200				2.6	3.40
20		5.0 28	210				2.4	3.30
21		3.8 28	230				2.8	3.10
22		3.6 28	250				2.2	3.05
23		3.5 26	260				2.1	3.00

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 26

Baguio, P. I. (16.4° N, 120.6° E) February 1961								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.0)	24	250				(3.10)
01		7.7	26	250				3.20
02		>6.6	27	245				3.30
03		5.0	26	240				3.20
04		3.7	25	255				3.10
05		3.2	24	280				3.05
06		(3.3)	25	300				(2.90)
07		6.6	27	265				3.15
08		9.0	27	255				3.10
09		(10.2)	27	245				(2.90)
10	(310)	10.8	27	(240)				(2.80)
11	(335)	11.4	26	(230)				2.60
12	(340)	10.6	26	<235				(2.40)
13	(345)	10.6	26	(220)				(2.40)
14		(10.4)	26	225				(2.55)
15		10.9	27	(240)				(2.60)
16		>11.0	25	<250				(2.70)
17		>11.0	27	260				(2.80)
18		(10.8)	27	270				(2.90)
19		>10.5	27	270				(2.85)
20		(10.2)	24	270				(2.90)
21		(10.1)	24	250				(3.00)
22		(9.9)	25	250				(3.05)
23		9.1	25	245				3.05

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 27

Singapore, British Malaya (1.3° N, 103.8° E) February 1961								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.6 23	210					3.00
01		5.6 20	230		120			2.80
02		5.4 24	250					2.85
03		5.1 21	250		115			3.00
04		4.7 25	245					3.05
05		4.2 23	240					3.20
06		3.8 26	245					3.05
07		7.0 24	245		120	2.15	2.5	3.20
08		8.2 26	230		110	2.85	3.1	3.10
09	500	9.0 27	220		110	3.30	3.5	2.65
10	630	9.7 27	210	4.9	110	3.60		2.35
11	345	10.0 24	205	4.9	105	3.80		2.15
12	360	10.2 19	200	5.0	110	3.85		2.05
13	350	10.2 23	200	5.0	105	3.80	3.8	2.15
14	375	10.2 27	200	5.0	105	3.65	4.0	2.20
15	325	10.4 27	200		110	3.50	3.6	2.25
16		10.8 25	210		110	3.05	3.2	2.35
17	245	10.8 25	240		110	2.60	2.9	2.40
18		11.0 24	265		130	1.60	2.6	2.40
19		10.7 24	310				2.5	2.40
20		10.5 19	340					2.45
21		10.3 17	290				2.2	2.70
22		11.0 18	240					3.05
23		9.2 23	210					3.20

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 28

Townsville, Australia (19.3° S, 146.7° E) February 1961								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>7.0	5	280			2.4	----
01		>6.5	8	250			2.4	----
02		>6.0	14	230			1.9	(3.10)
03		>4.5	16	250				3.05
04		>4.3	19	250				3.00
05		4.0	18	260				2.95
06		4.0	13	260			<1.70	3.05
07		6.0	15	240			2.40	(3.30)
08		6.8	15	225			2.90	3.5
09		7.4	20	210	4.6		3.20	3.9
10		8.0	15	200	4.8		3.50	3.9
11		>8.4	13	200	4.9		3.65	3.8
12		>9.0	13	200	4.9		3.70	3.8
13		>10.4	15	205	4.9		3.75	4.1
14		>10.5	12	210	4.8		3.60	4.1
15		>10.5	8	210	4.7		3.50	3.8
16		>8.4	6	(200)	4.5		3.20	3.7
17		>8.0	8	230			2.80	3.6
18		>7.1	8	240			2.20	3.4
19		>6.7	12	240			----	3.3
20		>6.9	6	300				3.9
21		>6.5	3	300				3.0
22		>6.4	4	300				2.0
23		>6.2	8	300				----

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 29

Johannesburg, Union of S. Africa (26.1° S, 28.1° E) February 1961								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7 28	---				<1.4	2.85
01		4.6 28	---				<1.6	2.80
02		4.2 28	---				<1.4	2.90
03		4.0 28	310				<1.1	2.85
04		3.6 28	---					2.85
05		3.4 28	260				<1.1	2.80
06		4.7 28	255			1.6		3.05
07		6.1 28	240			2.4	2.5	3.15
08	280	7.2 28	225	4.4		2.9	3.2	3.10
09	300	8.0 28	220	4.9		3.3	3.6	2.90
10	310	8.8 28	210	5.0		3.5	3.8	2.85
11	315	9.3 28	205	5.0		3.7	4.0	2.80
12	320	9.9 28	200	5.0		3.8	4.2	2.80
13	310	10.0 27	200	5.0		3.7	4.1	2.80
14	305	10.1 27	210	5.0		3.7	4.1	2.80
15	300	9.8 27	(200)	4.8		3.5	4.0	2.85
16	285	9.4 28	220	---		3.2	3.8	2.90
17	270	8.9 28	230			2.8	3.4	2.95
18		8.8 28	250			---	2.8	3.00
19		(8.2)	28	240		<1.6	1.9	(3.00)
20		7.2 28	230			<1.8	2.95	3.10
21		6.3 28	(240)			<1.6	2.90	3.00
22		5.4 28	---			<1.6	2.90	2.95
23		5.0 28	---			<1.5	2.85	3.00

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 30

Mundaring, W. Australia (32.0° S, 116.2° E) February 1961								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7 19	270				2.6	3.00
01		4.2 16	<270				2.8	3.00
02		4.1 21	<260				3.6	3.00
03		4.0 20	<250				3.5	3.00
04		3.7 19	<260				2.8	3.00
05		3.6 20	250					3.10
06		4.0 20	260				----	3.30
07		5.0 17	230				2.30	3.1
08		5.8 18	225	4.1			2.80	3.4
09		6.4 19	210	4.6			3.20	3.10
10		6.9 22	210	4.8			3.45	3.6
11		7.0 20	200	4.8			3.50	4.0
12		7.0 21	200	4.9			3.50	3.9
13		7.8 19	200	5.0			3.60	3.8
14		7.8 21	210	4.9			3.50	3.8
15		7.8 22	210	4.8			3.40	3.6
16		7.6 25	220	4.5			3.20	3.4
17		7.4 24	220	4.2			2.80	3.10
18		7.1 23	240				2.30	3.15
19		6.6 18	240					3.10
20		6.0 16	(230)					3.05
21		5.7 17	<250					3.00
22		4.9 16	270					2.95
23		4.8 17	<270					3.00

Time: 120.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 18 seconds.

Table 31

Capetown, Union of S. Africa (34.1° S, 18.3° E)							
February 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		4.1 28	---				<1.6 2.80
01		4.0 28	---				<1.6 2.80
02		3.9 28	---				<1.5 2.80
03		3.8 28	---				<1.5 2.80
04		3.8 28	---				<1.5 2.85
05		3.6 28	---				<1.4 2.90
06		3.6 28	285		<1.4	<1.4	2.90
07		5.2 28	245			2.0	3.15
08	(270)	6.2 28	235	---		2.6	3.00
09	305	7.2 28	225	4.7		3.0	2.95
10	335	7.7 28	215	4.9		3.3	2.85
11	320	8.6 28	(210)	4.9		3.5	2.80
12	320	9.1 28	(210)	5.0		3.7	2.80
13	325	9.6 28	(205)	5.0		3.7	2.80
14	330	9.6 28	200	4.9		3.6	2.80
15	310	9.4 28	220	4.9		3.6	2.85
16	300	9.1 28	220	4.7		3.3	2.90
17	295	8.4 28	230	4.4		3.1	2.95
18	270	8.5 28	230	---		2.7	3.00
19	(250)	8.0 28	245	---		2.0	3.15
20		7.2 28	235			<1.6	3.10
21		6.5 28	(220)			<1.5	3.10
22		5.2 28	---			<1.6	3.00
23		4.4 28	---			<1.6	2.95

Time: 30.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 33

Godhavn, Greenland (69.3° N, 53.5° W)							
February 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.35) 18					(2.78)
01		(3.7) 17					(2.75)
02		(3.7) 18					(2.85)
03		(3.45) 16					(2.80)
04		(3.2) 14					2.7
05		(3.25) 10					3.1
06		(3.3) 7					4.0
07		(4.0) 7					3.9
08		(5.0) 7			---	---	---
09		(5.2) 9			---	---	---
10		(6.3) 13			(123) ---		(3.10)
11		(7.6) 15			(122) 2.45		(3.05)
12		(7.7) 19			<127 ---		(3.00)
13		(7.2) 18			<125 ---		(2.95)
14		(7.0) 20			(125) 2.40		(3.08)
15		(6.5) 14			<127 2.10		(3.02)
16		(6.8) 19			<135 ---	2.4	(3.00)
17		(6.1) 18			---	2.6	(2.85)
18		(6.6) 16			---	2.8	(2.80)
19		(6.2) 21					(2.70)
20		(5.5) 18					(2.80)
21		(5.5) 15					(2.62)
22		(5.0) 21					(2.70)
23		(5.15) 14					(2.85)

Time: 45.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 18 seconds.

Table 35

Dourbes, Belgium (50.1° N, 4.6° E)							
February 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		4.7 27	270				<1.2 2.70
01		4.4 26	280				2.60
02		4.4 27	290				2.60
03		4.3 27	300				2.60
04		3.9 27	280				<1.2 2.80
05		3.5 27	<260				<1.5 2.90
06		3.6 27	260				<1.5 2.90
07		5.0 26	230		121	<1.50	3.10
08		8.2 26	230		116	2.20	3.30
09		9.8 28	225		113	2.65	3.20
10	---	10.9 29	225		111	2.90	3.15
11	---	11.4 28	220		113	3.00	3.15
12	---	11.8 29	220		115	3.10	3.10
13		11.6 26	225		115	3.00	3.05
14		11.9 26	235		115	2.90	3.10
15		11.0 25	235		117	2.60	3.10
16		10.4 28	230		121	2.10	3.10
17		9.6 25	220		---	<1.50	1.8
18		8.4 26	220			<1.6	3.10
19		7.3 24	220			<1.6	3.05
20		5.9 26	240			<1.6	3.00
21		5.4 22	250			<1.6	2.90
22		4.7 23	270			<1.6	2.80
23		4.9 27	200			<1.6	2.70

Time: 0.0°.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 32

Christchurch, New Zealand (43.6° S, 172.8° E)							
January 1961							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.6 25	260				2.5 2.65
01		5.9 30	260				2.1 2.70
02		5.4 27	260				<1.7 2.70
03		5.0 28	260				<1.6 2.70
04		4.8 26	260		---	---	<1.7 2.70
05		4.0 25	260		110	1.7	2.0 2.80
06		4.8 24	250		110	2.2	2.7 3.00
07	---	5.4 24	230	---	105	2.8	3.3 2.85
08	340	6.1 27	230	4.2	105	(3.0)	3.8 3.00
09	320	6.7 27	210	4.6	100	3.3	3.9 3.00
10	340	7.0 25	210	4.8	100	3.6	4.2 2.90
11	340	6.8 26	200	4.9	100	3.8	4.1 2.85
12	340	7.1 27	200	4.9	100	3.9	4.2 2.80
13	350	7.0 28	210	4.9	100	3.8	4.1 2.85
14	360	6.8 27	210	4.9	100	3.7	4.3 2.80
15	350	7.0 27	220	4.8	105	3.6	4.0 2.80
16	340	7.0 29	220	4.7	105	3.4	3.9 2.85
17	310	7.2 29	220	4.3	105	3.2	3.7 2.90
18	(300)	7.3 29	230	---	105	2.9	3.6 2.90
19	---	7.2 27	250	---	110	2.3	2.7 2.85
20		(7.4) 29	260		---	(1.7)	2.1 (2.75)
21		(7.3) 27	260				2.2 (2.60)
22		(7.2) 25	270				<1.8 (2.60)
23		6.9 23	280				<1.8 2.60

Time: 180.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 34

Juliusruh/Rügen, Germany (54.6° N, 13.4° E)							
February 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		4.4 26	300				2.50
01		4.2 26	<300		---		2.55
02		4.1 25	300		---		2.50
03		3.9 27	300		---		2.50
04		3.7 26	300				2.55
05		3.6 25	290				2.70
06		3.3 27	280				2.70
07		4.3 23	270			(1.60)	2.90
08		7.0 27	240			2.10	3.15
09		9.0 28	235			2.60	3.10
10		10.4 26	235			2.95	3.10
11		11.5 26	235			3.10	3.05
12		12.1 25	230			3.30	3.00
13		12.1 28	230			3.20	2.95
14		12.3 27	235			3.15	3.00
15		11.9 27	235			2.90	3.00
16		11.3 27	230			2.40	3.10
17		10.0 24	230			2.10	3.00
18		9.4 24	230				3.05
19		7.8 25	230				3.00
20		6.5 24	240				2.85
21		5.5 25	270				2.75
22		5.0 27	280				2.70
23		4.5 27	300				2.60

Time: 15.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 20 seconds.

Table 36

Pruhonice, Czechoslovakia (50.0° N, 14.6° E)							
February 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		4.9 23	215				
01		4.4 23	285				
02		4.4 23	295				
03		4.3 23	275				
04		4.1 23	270				
05		3.8 23	250				
06		4.6 23	240		---	---	
07		8.2 21	220		115	2.1	
08		10.2 18	220		100	2.6	
09		11.4 20	210		100	2.9	4.4
10		11.6 20	215		100	3.1	
11		12.0 21	210		100	3.2	
12		12.2 20	210		100	3.2	
13		12.2 22	215		100	3.1	
14		12.0 22	225		100	2.9	
15		11.2 22	225		100	2.5	
16		10.5 23	210		115	2.2	
17		9.4 22	210		---	---	
18		8.3 23	210				
19		7.0 23	215				
20		5.8 23	230				
21		5.3 23	250				
22		5.0 23	275				
23		4.9 23	280				

Time: 0.0°.

Sweep: 1.0 Mc to 18.0 Mc.

Table 37

St. John's, Newfoundland (47.6° N, 52.7° W)								February 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	5.6	22	285					2.70
01	5.2	26	295					2.65
02	5.0	25	300					2.60
03	4.5	26	294					2.75
04	4.3	27	272					2.75
05	4.3	29	258					2.75
06	4.4	29	258					2.80
07	6.8	29	237		122	2.00		3.15
08	6.8	29	230		120	2.60		3.15
09	10.0	29	230	---	115	3.00		3.15
10	11.2	29	228	---	116	3.20		3.10
11	11.6	28	228	---	113	3.30		3.05
12	11.8	29	230	---	112	3.40		3.00
13	11.8	29	228	---	111	3.30		3.00
14	11.9	29	230	---	112	3.00		2.95
15	11.9	29	238	---	118	2.80		2.95
16	11.4	29	235	---	121	2.35		3.00
17	10.9	29	234	---	---	---		3.00
18	9.7	29	230	---	---	---		2.95
19	8.4	28	230	---	---	---		2.90
20	7.0	29	240	---	---	---		2.80
21	6.2	26	265	---	---	---		2.70
22	6.0	26	276	---	---	---		2.70
23	5.9	23	285	---	---	---		2.70

Time: 60.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 39

Dakar, French W. Africa (14.8° N, 17.4° W)								February 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	0	11	250	---	---	---	2.6	---
01	0	11	235	---	---	---	2.6	---
02	0	11	230	---	---	---	2.1	---
03	(13.5)	9	220	---	E	2.0	---	---
04	(12.7)	5	200	---	E	2.0	---	---
05	(6.7)	9	210	---	E	2.2	---	---
06	5.4	10	225	---	E	2.4	(3.15)	---
07	4.4	13	230	---	E	2.6	(3.10)	---
08	8.2	16	240	---	120	2.00	3.8	3.20
09	>11.5	19	235	---	105	2.90	4.5	3.25
10	13.5	20	220	---	100	3.40	4.8	3.20
11	15.4	18	200	---	100	3.70	4.8	3.05
12	15.8	17	200	---	100	3.90	---	2.80
13	---	15.6	17	200	---	100 (4.00)	---	2.60
14	---	15.9	16	200	---	100 (3.90)	---	2.40
15	---	15.9	19	200	---	100 3.80	---	2.40
16	---	15.6	20	215	---	100 3.60	---	2.35
17	---	>15.1	16	230	---	100 3.40	3.5	2.40
18	---	(15.0)	15	245	---	110 2.80	4.5	---
19	---	(14.4)	8	260	---	---	1.70	(2.30)
20	---	>14.5	11	345	---	E	2.6	---
21	---	>15.6	2	345	---	E	2.6	---
22	---	0	3	280	---	---	2.6	---
23	---	0	3	250	---	---	2.6	---

Time: 0.0°E.
Sweep: 1.2 Mc to 17.0 Mc.

Table 41

Ibadan, Nigeria (7.4° N, 3.9° E)								February 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	9.2	26	250					(2.75)
01	9.0	25	250					2.85
02	9.3	26	250				1.0	2.90
03	9.1	25	245				1.3	3.20
04	8.2	25	225					3.30
05	>5.7	23	220					3.35
06	5.5	23	250			(1.50)		(3.10)
07	>9.2	21	250			2.60		3.20
08	11.1	26	240			3.20	5.6	3.00
09	12.4	26	225			3.65	6.1	2.60
10	12.3	27	210			3.90	6.4	2.45
11	12.0	27	205			(4.10)	8.2	2.40
12	12.1	27	205			4.10	8.4	2.35
13	11.9	27	205			(4.05)	8.5	2.30
14	12.1	27	205			(3.90)	8.4	2.30
15	>12.2	27	220			3.60	6.3	2.30
16	11.6	27	240			3.20	8.5	2.35
17	>11.6	24	250			2.60	5.9	(2.30)
18	>10.5	24	300			1.60	---	(2.25)
19	9.2	26	400			---	---	2.10
20	8.8	26	385			---	---	2.20
21	9.0	26	305			---	---	(2.35)
22	9.0	26	260			---	---	(2.60)
23	>9.1	26	250			---	---	(2.70)

Time: 0.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 38

Macau (22.2° N, 113.6° E)								February 1960
Time	h'F2	foF2—Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	380	9.0	21					2.70
01	400	9.0	19					2.60
02	390	9.0	23					2.50
03	380	8.9	22					2.70
04	360	6.4	25					2.65
05	395	4.3	16					2.40
06	440	3.7	13					2.30
07	460	5.7	14					2.30
08	440	8.6	20			---	---	2.40
09	440	9.8	22	400	---	---	---	2.45
10	---	11.0	16	400	---	---	---	2.35
11	---	13.0	17	420	---	---	---	2.20
12	(600)	13.0	19	425	8.0	---	---	2.20
13	(600)	13.1	19	420	8.4	---	---	2.15
14	(640)	12.0	15	410	8.0	---	---	2.20
15	(660)	12.2	17	400	8.0	---	---	2.20
16	(575)	12.6	14	420	---	---	---	3.2
17	410	(9.7)	8	405	---	---	---	(2.30)
18	445	(9.4)	4					---
19	---	(9.0)	1					---
20	---	---	0					---
21	---	---	0					---
22	400	(9.0)	2					---
23	385	9.0	10					2.70

Time: 120.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 40

Djibouti, French Somaliland (11.6° N, 43.2° E)								February 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(8.8)	2	250				3.2	---
01	---	0	240				2.2	---
02	(8.3)	1	230				2.0	---
03	(6.5)	6	225				2.0	(3.10)
04	6.4	18	230				2.1	3.10
05	5.4	16	225			E	2.2	3.20
06	---	4.4	23	230	---	E	2.0	3.20
07	---	8.3	10	255	130	2.05	3.7	---
08	---	---	0	245	120	2.90	4.1	---
09	(12.0)	2	235			---	3.35	6.5
10	(12.5)	3	230			---	3.70	7.0
11	(11.2)	4	225			---	3.80	7.6
12	(11.4)	6	220			---	3.90	8.6
13	(11.5)	5	210			---	---	9.0
14	(11.5)	4	220			---	---	8.6
15	(11.4)	3	230			---	3.60	6.9
16	---	0	235			---	3.30	6.5
17	---	0	250			125	2.75	4.3
18	---	0	275			---	1.70	4.0
19	(10.0)	1	350			E	3.2	---
20	---	0	---			---	---	1.8
21	---	0	---			---	---	2.0
22	(9.0)	1	280			---	---	3.1
23	---	0	250			---	---	3.2

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc.

Table 42

Lwiro, Belgian Congo (2.3° S, 28.8° E)								February 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	11.5	19	200				2.99
01	---	9.6	15	240				2.84
02	---	9.4	18	250				2.87
03	---	9.0	18	250			(1.5)	2.96
04	---	8.0	20	230				3.13
05	---	7.3	20	220				3.20
06	---	6.6	19	225				3.21
07	250	9.0	21	240		119	2.50	3.33
08	250	10.1	22	225		111	3.15	3.17
09	(260)	10.6	25	215		111	3.60	2.92
10	(275)	11.5	25	210	(5.0)	111	3.90	2.70
11	---	12.0	24	205	---	109	4.05	2.62
12	(345)	12.6	25	205	---	109	4.10	2.58
13	345	>13.3	24	200	---	109	4.05	2.60
14	390	13.6	22	210	---	111	3.95	2.55
15	(415)	13.9	23	210	---	111	3.75	2.56
16	(410)	14.0	23	220	---	111	3.40	2.56
17	---	13.8	24	240	---	112	2.90	2.58
18	---	13.9	23	260	120	2.00	(2.2)	2.53
19	---	14.1	23	315			(1.8)	2.50
20	---	>13.3	21	325			(1.8)	(2.53)
21	---	>14.0	21	270			(1.6)	(2.78)
22	---	>14.0	21	225				(3.04)
23	---	>14.0	20	200				3.12

Time: 30.0°E.
Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 43

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5 28	270	---	---	---	2.8	2.80
01		7.9 29	250	---	---	E	3.1	2.80
02		6.7 28	250	---	---	E	3.1	2.70
03		6.1 29	<270	---	---	E	3.0	2.65
04		6.0 29	275	---	---	E	3.0	2.75
05		5.2 28	270	---	---	E	2.8	2.70
06		6.6 28	265	---	---	1.80	3.1	2.95
07		8.2 28	250	---	115	2.70		3.00
08		9.5 28	250	---	110	3.20		2.85
09	---	10.5 29	240	---	110	3.60		2.70
10	---	11.2 29	230	---	110	3.80		2.60
11	---	11.7 29	230	---	110	4.00		2.60
12	350	12.0 29	230	5.6	105	(4.00)		2.60
13	350	12.5 27	240	---	110	(4.00)		2.60
14	385	12.5 29	230	---	115	3.80		2.65
15	---	12.2 29	240	---	115	3.65	3.9	2.65
16	---	11.9 29	250	---	120	3.30	3.5	2.60
17		11.6 29	255	---	120	2.80	3.1	2.65
18		11.4 29	270	---	---	2.05	3.0	2.70
19		11.0 28	260	---	---	E	3.0	2.75
20		10.5 29	270	---	---	E	2.8	2.70
21		10.1 28	270	---	---	---	2.7	2.70
22		9.1 29	280	---	---	---	2.8	2.70
23		8.6 29	280	---	---	---	2.8	2.75

Time: 45.0°E.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 45

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>14.0 12	240					(3.10)
01		>14.0 15	230					---
02		>14.0 17	210					3.20
03		10.6 17	210					3.10
04		8.9 23	215					3.00
05		7.3 26	240					2.90
06		7.4 27	245			---		2.90
07		9.0 26	225			---		3.00
08		>10.0 25	220			(3.45)		2.95
09		10.7 23	(220)			---		2.65
10	---	11.4 18	<230	---		---		2.65
11	---	(12.5) 19	---	---		---		2.70
12	---	13.0 21	---	---		---		(2.70)
13	(350)	(13.6) 20	---	---		---		2.70
14	---	13.7 21	---	---		---		2.70
15	(440)	>13.8 20	(220)			---		2.70
16	(340)	(14.0) 23	(235)			---		(2.85)
17	---	>14.0 22	230			---		(2.95)
18		>14.0 21	245			---	2.6	(3.00)
19		(14.0) 23	270			---		(2.60)
20		>13.8 14	340			---		(2.65)
21		(14.0) 9	275			---		---
22		>14.0 8	245			---		---
23		>14.0 11	240			---		---

Time: 45.0°W.

Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 47

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.8 26	310				3.6	2.70
01		9.7 26	<305				4.0	2.75
02		9.75 24	280				3.6	2.90
03		8.6 25	260				3.2	2.85
04		8.0 24	260				3.0	2.68
05		7.8 24	295			(1.65)	2.5	2.62
06		>9.05 24	240		114	2.35	2.6	2.85
07		10.3 25	230		105	2.85	3.5	2.90
08		11.0 27	230		101	3.32	4.2	2.95
09	---	11.4 29	(220)		102	3.65	4.2	2.90
10	---	11.7 27	(220)		103	3.90	4.6	2.80
11	330	12.2 29	(215)	---	105	3.90	4.3	2.80
12	320	12.8 29	(220)	---	104	(4.00)	4.6	2.80
13	330	13.0 29	(230)	6.7	107	3.98	4.8	2.80
14	<330	13.1 28	<230	6.0	107	3.92	4.6	2.85
15	310	13.0 29	(240)		107	3.75	5.0	2.90
16	(300)	12.7 27	(240)		105	3.40	5.3	2.90
17	<300	12.2 28	245		107	2.90	4.4	2.90
18		11.4 29	(260)			<113	2.15	2.90
19		11.0 28	280				3.6	2.82
20		>10.0 27	<320				3.4	2.68
21		>9.85 26	340				3.8	2.58
22		10.0 26	330				4.7	2.65
23		>10.0 25	325				4.5	2.62

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 44

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.5 1	285					
01		---	0	---			2.2	
02		>6.5 1	250				3.0	
03		>6.2 2	260				3.1	
04		>6.2 4	280				2.8	---
05		>6.0 6	290				2.6	---
06		>5.6 2	280			<1.70		---
07		>6.7 2	250			2.55		
08		>9.0 2	240			3.15	3.4	
09		(11.0) 11	230			3.50	4.0	(2.90)
10		>11.0 12	220			3.70	4.4	(2.85)
11		12.0 16	(230)			3.90	4.3	2.80
12		12.5 17	<230	6.2		3.95	5.0	2.80
13		13.1 15	(230)			4.00	4.7	2.80
14		(12.5) 17	<240			3.90	4.3	2.80
15		(12.4) 15	220			3.70	4.2	(2.80)
16		>11.5 10	230			3.50	4.0	---
17		>11.5 4	250			3.05	3.3	---
18		>11.8 1	250			2.30	3.3	---
19		>11.0 1	260				3.0	---
20		---	0	300			3.1	---
21		---	0	310			2.7	---
22		---	0	300				---
23		---	0	300			1.8	---

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 46

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.4 23	300				3.2	2.75
01		7.9 22	270				3.1	2.70
02		7.4 22	270				2.9	2.65
03		6.9 21	290				2.7	2.65
04		6.8 22	290					2.65
05		6.6 22	280			---		2.65
06		>7.5 22	250			2.35		2.90
07		8.3 22	240	---		2.80	3.2	3.00
08		8.8 22	230	---		3.30	4.0	2.85
09		10.2 22	230	---		3.55	4.2	2.80
10		11.0 21	220	---		3.75	4.4	2.80
11		11.0 20	220	---		3.80	4.4	2.75
12		11.6 22	220	---		5.8	3.90	4.2
13		11.2 22	230	6.2		3.80	>4.2	2.70
14		10.9 23	220	5.6		3.80	4.0	2.75
15		10.2 23	230	5.9		3.60	3.8	2.75
16		10.0 22	235			3.30	3.4	2.80
17		10.0 23	250			2.80	3.3	2.85
18		9.6 23	250			2.40	2.5	2.85
19		8.9 23	250			---	2.5	2.75
20		8.5 22	280					2.60
21		8.4 22	300					2.60
22		>8.4 20	310					2.60
23		8.3 23	300				2.9	2.65

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 48

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5 19	305			---	1.8	2.55
01		8.2 20	310			---	1.4	2.60
02		7.9 22	320			---	1.4	2.50
03		8.5 16	330			---	1.3	2.55
04		7.7 21	315			1.50		2.50
05		7.6 23	290			1.85	2.0	2.60
06		8.4 25	260			(2.40)	2.8	2.60
07		8.4 24	250			(2.55)	3.2	2.70
08		8.2 24	245			3.30	3.6	2.80
09		7.9 23	240			3.35	3.9	2.80
10		8.4 24	(235)			---	4.6	3.00
11		8.3 26	230			---	4.7	2.90
12		8.2 23	230			---	4.7	3.00
13		8.2 25	235			---	4.9	3.05
14		8.2 27	240			3.50	4.8	3.05
15		7.9 27	235			3.20	4.3	3.05
16		7.8 29	240			(3.20)	3.8	3.00
17		7.8 28	250			(2.85)	3.1	3.10
18		8.0 29	250			(2.50)	3.3	3.00
19		8.1 28	260			(2.30)	3.2	3.00
20		8.6 26	265			1.80	3.0	2.85
21		8.4 23	270			1.50	2.0	2.80
22		8.6 22	280			---	1.6	2.65
23		8.6 20	300				1.4	2.60

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 49

Wilkes Station (66.3° S, 110.5° E) February 1960									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	5.6	24	230	4.2	100	2.80	3.0	2.55	
01	5.8	24	220	4.4	100	3.00	3.2	2.50	
02	6.0	24	220	4.5	100	<3.20	3.3	2.45	
03	(6.2)	19	220	4.5	100	3.30	3.5	2.40	
04	(6.2)	20	<215	(4.6)	100	(3.30)	3.4	(2.50)	
05	(6.8)	18	220	4.7	100	3.40		(2.40)	
06	(7.0)	13	(210)	(4.8)	100	(3.35)	3.5	(2.40)	
07	>6.2	16	220	4.3	100	<3.35	3.4	(2.30)	
08	5.8	19	<220	4.3	100	>3.20		(2.30)	
09	(5.8)	18	220	(4.2)	100	3.05		(2.30)	
10	5.5	15	235	(3.8)	110	(2.70)	2.25	(2.50)	
11	(5.7)	18	<245	(3.6)	110	2.50		(2.35)	
12	(5.8)	15	270	>3.0	110	2.00	2.0	(2.50)	
13	(6.0)	13	285	---	110	(1.60)	1.9	2.65	
14	5.2	14	270	---	---	<1.30	2.0	2.60	
15	(4.7)	14	280	---	---	E		(2.60)	
16	(4.3)	15	280	---	---	E		(2.55)	
17	(4.6)	14	<260	---	---	E		(2.70)	
18	4.3	11	<260	---	---	E		(2.55)	
19	4.2	18	270	---	---	E		2.65	
20	(4.8)	15	260	---	---	1.20	2.2	(2.80)	
21	4.8	17	250	---	105	(1.70)	2.2	2.75	
22	(5.4)	16	250	(3.6)	>105	(2.10)	2.4	(2.80)	
23	5.2	13	240	(4.0)	110	(2.65)	3.2	2.55	

Time: 0.0°.

Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 51

Churchill, Canada (58.8° N, 94.2° W) December 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(4.2)	25	300	---	---	---	4.7		
01	4.0	20	300	---	---	---	4.2		
02	(4.1)	23	330	---	---	---	4.0	----	
03	4.0	20	310	---	---	---	3.5		
04	4.4	17	330	---	---	---	3.5		
05	4.3	17	<330	---	---	---	3.3		
06	4.2	15	325	---	---	---	3.3	----	
07	4.3	17	330	---	---	---	3.0	----	
08	4.5	19	300	---	---	---	3.0	----	
09	5.8	22	280	---	---	1.90	3.15		
10	7.2	25	260	---	---	2.35	3.15		
11	9.0	25	260	---	---	2.50	3.15		
12	9.7	26	250	---	---	(2.60)	(3.20)		
13	11.0	29	250	---	---	2.50	3.05		
14	11.0	29	250	---	---	2.50	(3.10)		
15	10.5	28	250	---	120	2.00	3.00		
16	9.1	28	260	---	130	1.85	(3.00)		
17	7.4	22	280	---	---	---	2.6	----	
18	5.0	26	320	---	---	---	3.0	----	
19	4.6	24	305	---	---	---	3.0	----	
20	4.9	26	300	---	---	---	3.1	----	
21	4.5	24	300	---	---	---	3.1	----	
22	4.1	21	300	---	---	---	5.0	----	
23	4.0	20	285	---	---	---	5.0	----	

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 53

Akita, Japan (39.7° N, 140.1° E) November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	4.3	29	300				2.65		
01	4.4	29	300				2.65		
02	4.4	28	305				2.70		
03	4.4	28	300				2.70		
04	4.2	30	300				2.70		
05	4.0	30	300				2.65		
06	4.8	30	260				2.90		
07	8.6	30	240				3.30		
08	---	11.2	30	240		2.70	3.1	3.25	
09	---	12.2	30	240		3.05	3.5	3.25	
10	(245)	13.1	30	235		3.25	3.7	3.20	
11	240	12.8	30	225		3.40		3.10	
12	240	12.4	30	230		3.40		3.05	
13	---	12.4	30	245		3.30		3.10	
14	---	11.9	30	245		3.05		3.10	
15	11.3	29	240			2.60		3.15	
16	10.5	29	230			----		3.15	
17	8.2	30	210					3.10	
18	6.6	30	240					3.10	
19	5.9	30	240					3.05	
20	5.2	30	245					2.90	
21	5.0	30	260					2.80	
22	4.6	30	280					2.80	
23	4.5	30	300					2.70	

Time: 135.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 50

Concepcion, Chile (36.6° S, 73.0° W) January 1960									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	9.75	30	315				4.1	2.70	
01	9.6	30	290				3.9	2.75	
02	9.15	28	280				3.8	2.75	
03	8.7	29	280				2.8	2.65	
04	8.45	28	310				2.6	2.55	
05	8.8	29	270		119	1.85	2.4	2.52	
06	9.8	28	240		109	2.65	3.3	2.70	
07	---	10.6	30	230	---	101	3.20	4.0	2.65
08	<330	11.05	30	225	---	101	(3.60)	4.2	2.60
09	365	11.6	30	220	5.7	101	(3.85)	4.2	2.58
10	360	11.8	29	(220)	6.0	103	4.00	4.8	2.60
11	360	12.1	29	<220	6.0	107	(4.10)	4.7	2.65
12	360	12.4	29	(215)	6.2	109	(4.22)		2.65
13	370	12.05	30	(220)	5.9	109	4.15	4.6	2.65
14	360	11.95	30	220	5.8	108	4.05	4.4	2.70
15	360	11.6	31	(230)	5.8	105	3.90	4.7	2.70
16	340	10.95	30	(230)	5.6	103	3.60	5.0	2.80
17	325	10.2	29	(240)	---	107	(3.20)	4.6	2.80
18	<350	9.35	30	260	---	110	2.62	4.0	2.70
19	8.8	29	290		---	---	---	3.6	2.55
20	9.05	30	360					3.2	2.40
21	9.5	30	370					3.8	2.40
22	>9.7	30	350					3.4	2.50
23	9.7	30	330					4.4	2.60

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 52

Wakkanai, Japan (45.4° N, 141.7° E) November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	4.2	28	320					2.60	
01	4.3	29	310					2.60	
02	4.0	30	305				2.5	2.60	
03	4.2	30	300				3.0	2.60	
04	4.1	30	300				2.5	2.70	
05	4.0	30	285					2.70	
06	4.5	29	260					2.85	
07	8.0	29	230			2.10		3.20	
08	10.7	29	225			2.60	2.8	3.25	
09	12.0	30	230			2.90	3.5	3.15	
10	12.6	28	230			3.05	3.6	3.20	
11	12.7	28	225			3.20	3.4	3.15	
12	12.7	27	230			3.15	3.2	3.10	
13	12.0	28	230			3.05	3.3	3.05	
14	11.8	28	235			2.75		3.10	
15	11.2	28	230			2.30	3.6	3.15	
16	9.7	29	220					3.10	
17	7.8	30	220					3.00	
18	6.2	30	240					3.00	
19	5.3	30	250					3.00	
20	4.6	30	270					2.85	
21	4.5	30	300				3.0	2.75	
22	4.5	29	300					2.65	
23	4.3	28	310					2.65	

Time: 135.0°E.

Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 54

Tokyo, Japan (35.7° N, 139.5° E) November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	4.3	30	300					2.70	
01	4.1	30	300					2.70	
02	4.0	30	305					2.70	
03	4.0	30	300					2.70	
04	4.0	30	300					2.75	
05	3.8	30	305					2.65	
06	5.0	30	270					2.90	
07	9.1	30	240			(2.40)		3.30	
08	11.4	30	240			2.85		3.20	
09	12.5	27	240			3.20	3.5	3.20	
10	13.3	27	<240			(3.40)	3.6	3.20	
11	13.2	28	230			3.50		3.10	
12	12.6	28	240			(3.50)	3.6	2.95	
13	12.8	28	245			3.45	3.5	3.00	
14	12.3	29	245			3.25	3.3	3.05	
15	11.4	29	240			2.80	2.9	3.05	
16	11.0	29	230			(2.25)		3.10	
17	9.0	29	220					3.10	
18	7.4	30	245					3.00	
19	6.4	30	250					3.00	
20	5.9	30	250					2.85	
21	5.3	30	260					2.90	
22	4.8	30	280					2.80	
23	4.5	30	300					2.70	

Table 55

Yamagawa, Japan (31.2° N, 130.6° E)									
November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		5.6	25	270				2.75	
01		4.9	25	285				2.75	
02		4.4	23	280				2.70	
03		4.3	25	275				2.80	
04		4.0	24	250				2.90	
05		3.5	24	270				2.60	
06		3.6	24	300				2.65	
07		(7.0)	22	250		2.00		(3.05)	
08		10.8	23	245		2.70		3.25	
09		12.5	25	245		3.10		3.20	
10		13.3	25	240		3.40	3.7	3.15	
11		13.8	26	240		3.50	3.8	3.05	
12	---	13.6	25	225		3.60	3.8	2.90	
13	---	14.0	23	240		3.55	3.6	2.85	
14	---	13.8	22	245		3.40	3.6	2.90	
15		13.4	23	245		3.20	3.5	2.90	
16		12.6	23	245		2.70	3.0	2.95	
17		11.7	23	240		---	2.5	2.95	
18		10.5	23	225			2.6	2.95	
19		9.1	24	245			2.1	2.80	
20		(9.0)	23	245				(2.85)	
21		(8.5)	24	245			2.4	(2.90)	
22		(7.4)	24	250			2.0	(2.90)	
23		5.7	25	255				2.75	

Time: 135.0°E.

Sweep: 1.0 Mc to 20.3 Mc in 30 seconds.

Table 57

Lwiro, Belgian Congo (2.3° S, 28.8° E)									
October 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		>11.5	12	195				(2.89)	
01		10.8	17	240				2.80	
02		11.2	14	255				2.86	
03		10.6	15	250				3.06	
04		10.3	14	220				3.28	
05		8.2	14	210				3.33	
06		7.6	17	240				(2.1)	
07		240	9.6	18	240	121	2.80	2.8	
08		245	10.3	17	220	113	3.35	3.6	
09		(260)	11.0	19	210	111	3.70	3.9	
10		---	12.0	18	200	---	3.95	2.74	
11		---	12.8	19	200	---	4.05	2.72	
12		---	13.2	20	200	---	4.10	2.55	
13		415	14.0	21	200	---	4.00	2.52	
14		410	14.6	21	210	111	3.90	2.60	
15		385	(14.9)	21	220	111	3.55	2.61	
16		385	(14.7)	22	235	113	3.15	(2.59)	
17		(380)	(14.5)	21	250	119	2.55	(2.8)	
18		>14.0	21	290	---	---	(2.8)	(2.52)	
19		>14.0	21	335	---	---	(2.1)	---	
20		>13.4	18	290	---	---	(1.8)	---	
21		>14.0	18	240	---	---	(1.6)	---	
22		>14.6	18	210	---	---	(1.7)	(3.16)	
23		>14.1	20	200	---	---	(1.5)	(3.10)	

Time: 30.0°E.

Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 59

Lwiro, Belgian Congo (2.3° S, 28.8° E)									
July 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		12.9	23	220				(2.4)	3.00
01		11.4	26	220				(2.5)	3.04
02		9.4	21	220				(2.7)	2.86
03		8.6	26	235				(2.3)	2.87
04		8.0	24	230				(2.4)	3.00
05		>7.0	25	240				(2.4)	3.10
06		7.0	27	270	---	E		(2.6)	3.02
07		260	10.8	26	250	121	2.50	(3.1)	3.30
08		255	12.3	27	235	112	3.20	4.0	3.25
09		280	12.7	25	225	111	3.65	(4.6)	3.05
10		285	13.0	26	220	109	3.90	(5.4)	3.02
11		320	13.2	28	210	109	4.00	4.3	2.79
12		350	13.6	27	205	109	4.10	4.4	2.74
13		365	13.6	28	205	---	4.05	4.0	2.54
14		400	13.4	29	205	---	3.95	4.2	2.50
15		405	13.6	28	220	---	3.80	(4.2)	2.49
16		420	13.4	28	230	---	3.30	(4.3)	2.49
17		---	13.9	29	245	---	2.75	(3.7)	2.51
18		---	14.4	28	275	---	---	(3.3)	2.63
19		---	(15.1)	29	285	---	---	(3.3)	(2.72)
20		---	>13.4	29	275	---	---	(2.4)	(2.99)
21		---	>13.4	26	225	---	---	(2.6)	<2.89
22		---	>13.3	25	225	---	---	(2.6)	<2.87
23		---	>13.7	26	225	---	---	(2.6)	2.97

Time: 30.0°E.

Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 56

Oe Bilt, Holland (52.1° N, 5.2° E)									
October 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.6	31	330					2.70
01		4.4	30	315					2.75
02		4.5	31	320					2.75
03		4.2	30	310					2.80
04		3.9	31	(295)					2.95
05		3.5	31	<300					3.00
06		---	4.5	31	250	---	1.9		3.10
07		(240)	6.8	31	230	---	130	2.3	3.20
08		250	8.2	29	230	4.3	120	2.8	3.25
09		245	9.4	30	230	4.3	115	3.0	3.15
10		250	10.6	30	230	4.4	110	3.2	3.15
11		250	11.2	30	230	4.6	115	3.4	3.10
12		250	11.2	31	230	---	110	3.4	3.05
13		250	11.1	31	230	---	110	3.3	3.10
14		250	11.2	31	240	---	110	3.0	3.05
15		250	10.8	30	235	---	110	2.8	3.10
16		(240)	10.5	31	230	---	130	2.4	3.15
17		---	9.4	31	230	---	---	1.8	3.20
18		---	8.2	30	230	---	---	---	3.15
19		---	7.3	30	240	---	---	---	3.15
20		---	6.1	30	245	---	---	---	3.05
21		---	5.4	28	260	---	---	---	2.90
22		---	5.1	28	300	---	---	---	2.85
23		---	4.7	31	320	---	---	---	2.75

Time: 0.0°.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 58

Churchill, Canada (58.8° N, 94.2° W)									
July 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		5.3	25	300	---	---	5.0		
01		5.0	25	340	---	---	4.7		
02		4.5	24	320	---	---	1.9	4.9	
03		4.6	21	310	---	---	1.9	4.8	
04		---	4.6	21	300	---	2.0	3.2	
05		(440)	5.0	19	280	3.4	110	2.5	3.4
06		500	4.8	18	240	4.0	110	3.0	4.5
07		G	4.8	18	260	4.5	110	3.2	4.5
08		G	5.4	16	240	4.6	105	3.6	4.3
09		510	5.9	15	240	4.8	105	3.8	4.3
10		550	5.8	19	230	5.0	100	3.9	4.6
11		500	6.0	20	220	5.0	100	3.8	4.5
12		500	6.1	20	220	5.0	105	3.8	(2.4)
13		460	6.1	19	220	5.0	105	3.8	(2.6)
14		470	6.5	21	210	5.0	105	3.8	(2.6)
15		460	6.7	21	220	5.0	110	3.5	---
16		450	6.6	21	230	4.9	110	3.5	(2.5)
17		410	6.5	21	240	4.8	105	3.2	(2.7)
18		390	6.1	21	(240)	4.5	110	3.1	---
19		(390)	6.0	21	280	---	110	3.0	3.5
20		---	5.7	21	300	---	120	3.0	4.2
21		---	5.8	21	320	---	120	2.3	4.8
22		---	5.2	21	310	---	---	2.0	5.6
23		---	5.0	22	320	---	---	2.0	5.0

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 60

Delhi, India (28.6° N, 77.2° E)							January 1959	
Time	*	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	(340)	>6.2	23					----
01	---	>5.7	25					----
02	---	(4.8)	6					----
03	---	(4.4)	6					----
04	---	>3.8	20					----
05	360	(3.6)	26					2.90
06	320	4.3	26					3.00
07	(280)	(8.8)	19					3.35
08	260	>11.6	26		120	2.8		3.45
09	280	12.6	30		100	3.2	4.0	3.25
10	320	13.4	24		100	3.7	4.3	3.00
11	360	>13.5	20		100	3.7		2.85
12	360	>13.5	21		120	3.8		2.80
13	380	14.0	22		---	---		2.80
14	380	14.1	19		---	---		2.70
15	(380)	(14.2)	28		100	3.6		(2.70)
16	(360)	>14.0	22		---	---		(2.80)
17	(340)	>13.3	25					(2.85)
18	---	>12.9	20					----
19	---	>13.0	23					----
20	---	>12.7	22					----
21	---	>10.2	20					----
22	---	>8.7	24					----
23	---	>7.2	15					----

Table 61

Ahmedabad, India (23.0° N, 72.6° E)								
January 1959								
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.5	29	250				2.75
01		10.4	29	250				2.95
02		9.4	29	240				3.05
03		7.4	26	230				3.05
04		5.8	24	220				2.70
05		4.2	26	270				2.65
06		4.7	21	300				2.80
07		8.4	23	265		E		3.05
08		12.4	26	250	110	2.6		3.10
09		13.7	29	250	110	3.2		3.05
10	250	13.4	29	230	---	110	3.7	2.75
11	300	14.2	29	222	---	110	3.9	2.55
12	350	15.2	29	222	5.2	110	4.0	2.45
13	350	>15.3	30	(250)	---	110	4.0	2.45
14	375	>15.3	27	(240)	6.8	110	4.0	2.40
15	375	(15.5)	27	(245)	6.7	110	3.7	2.40
16	350	>15.3	27	250	---	110	3.3	2.45
17	260	15.4	28	260	115	2.5		2.55
18		15.3	28	250			2.3	<2.60
19		>15.3	30	205			2.0	2.55
20		>15.3	30	260				<2.75
21		>15.3	30	230				(2.90)
22		>15.0	30	222				2.80
23		13.1	29	240				2.75

Time: 75.0°E.

Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 63

Bombay, India (19.0° N, 72.8° E)								
January 1959								
Time	*	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	---	>9.2	16					---
01	---	>8.6	20					---
02	---	>8.0	22					---
03	---	>6.7	27					---
04	300	>5.4	28					<3.15
05	(280)	>4.4	28					(3.25)
06	(280)	>4.9	24					(3.3)
07	(280)	>5.8	29					(3.25)
08	---	>6.2	1					---
09	280	(10.6)	27		120	3.2		3.25
10	(300)	>10.4	23		120	3.4		(3.1)
11	(380)	(10.9)	23		100	3.7		---
12	(400)	>11.1	26		120	3.2		(2.70)
13	---	>10.8	16		120	3.2		---
14	---	>10.8	25		120	3.4		---
15	---	>10.9	25		100	2.8		---
16	---	>10.7	25		---	---		---
17	---	>10.6	27		---	---		---
18	---	>10.4	28		---	---		---
19	---	>10.8	29					---
20	---	>10.6	4					---
21	---	>10.7	13					---
22	---	>10.0	11					---
23	---	>9.5	16					---

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

* Height at 0.83 foF2.

Table 65

Tiruchy, India (10.8° N, 78.7° E)								
January 1959								
Time	*	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	---	(10.9)	7					---
01	---	>9.7	7					---
02	---	>9.6	6					---
03	---	>8.1	10					---
04	280	7.2	17					(3.25)
05	260	6.2	26					3.45
06	300	6.2	20					3.10
07	300	(10.2)	29				5.3	3.20
08	370	12.2	31				9.2	2.75
09	480	12.8	25				>12.0	2.40
10	520	11.8	30				>13.4	2.25
11	520	11.6	30				13.2	2.20
12	560	11.0	30				12.8	2.15
13	560	>11.0	25				>12.2	2.15
14	560	11.3	29				12.2	2.10
15	560	11.8	30				>11.5	2.20
16	---	>12.1	6					---
17	---	(11.2)	3					---
18	(520)	>10.5	31					---
19	(560)	9.4	20					---
20	---	(10.4)	6					---
21	---	>10.6	5					---
22	---	>11.4	4					---
23	---	>11.4	6					---

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

* Height at 0.83 foF2.

Table 62

Calcutta, India (23.0° N, 88.6° E)								
January 1959								
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.0	29	250				(3.8)
01		>11.0	28	250				3.65
02		>9.0	29	240				3.7
03		(7.0)	29	230				3.7
04		5.0	29	250				3.5
05		>4.5	29	270				<3.35
06		(5.5)	29	270				<3.4
07		10.0	29	250		115	2.8	3.5
08		0	28	250		<105	3.1	3.55
09	---	0	28	250	----	100	3.6	----
10	(350)	0	28	250	(10.0)	100	>3.8	----
11	(350)	0	28	250	(9.0)	100	>4.0	----
12	(400)	0	28	250	(8.0)	100	>4.0	----
13	400	0	29	250	(8.0)	100	>4.0	----
14	400	0	28	250	(8.0)	100	>4.0	----
15	(400)	0	30	250	(7.5)	100	3.8	----
16	---	0	27	240	----	100	3.5	----
17		0	30	250		100	2.9	----
18		0	30	260		---	---	>2.6
19		0	30	270				----
20		0	30	250				----
21		0	30	230				----
22		0	30	220				----
23		0	29	240				----

Time: 90.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 64

Madras, India (13.1° N, 80.3° E)								
January 1959								
Time	*	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	---	10.8	31					---
01	---	10.2	30					---
02	---	9.0	25					---
03	---	8.4	24					---
04	310	7.4	27					---
05	300	6.0	26					3.20
06	320	6.8	30					2.95
07	320	11.1	31					2.95
08	360	13.1	31				4.0	2.75
09	440	13.8	30				4.0	2.45
10	540	12.9	24					2.15
11	560	11.7	25					2.10
12	560	11.8	27					2.10
13	560	12.0	14					2.15
14	560	12.0	19					2.15
15	560	12.5	27					2.15
16	560	12.6	24				3.8	2.20
17	540	12.5	28					(2.15)
18	560	11.7	28					---
19	(620)	11.2	28					---
20	(560)	11.0	23					---
21	---	11.1	24					---
22	---	11.2	25					---
23	(370)	10.9	31					---

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

* Height at 0.83 foF2.

Table 66

Kodaikanal, India (10.2° N, 77.5° E)								
January 1959								
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.3	15	260				2.70
01		9.1	16	260				2.80
02		8.5	23	260				2.80
03		8.4	22	250				2.90
04		7.6	26	230				3.05
05		6.5	28	220				3.20
06		5.8	29	250				2.85
07	---	9.7	28	255	---	115	2.6	2.90
08	---	11.7	30	240	---	110	3.3	2.70
09	---	12.3	27	230	---	110	---	2.35
10	---	11.7	27	220	---	---	---	11.6
11	---	11.1	27	210	---	---	---	11.8
12	---	10.8	29	200	---	---	---	12.2
13	---	10.8	28	205	---	---	---	12.0
14	---	11.2	29	220	---	110	---	11.6
15	---	11.4	30	235	---	110	---	10.6
16	---	11.4	30	250	---	110	---	8.8
17	---	11.2	31	270	---	120	---	7.2
18		(10.6)	30	310				2.05
19		9.6	23	400				2.05
20		9.1	15	360				2.15
21		(9.7)	14	320				(2.30)
22		10.1	13	295				2.60
23		(9.8)	15	260				(2.65)

Time: 75.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 67

Trivandrum, India (8.5° N, 77.0° E)									
January 1959									
Time	*	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	---	>9.7	8						
01	---	>9.3	8						
02	---	(9.2)	11						
03	(350)	>9.0	13						
04	320	7.5	15					(3.10)	
05	300	>6.2	24			3.20			
06	340	>6.6	26			2.85			
07	340	>9.4	31			2.90			
08	400	11.4	31			>9.0			
09	480	>11.5	28			>11.4			
10	500	11.4	28			>12.5			
11	520	11.0	30			(12.9)			
12	560	11.2	29			(13.0)			
13	600	11.0	28			(13.0)			
14	600	11.4	27			(12.6)			
15	600	11.6	30			>12.0			
16	580	11.5	31			>11.2			
17	(560)	>10.9	28					(2.10)	
18	---	>9.8	25						
19	---	>9.4	17						
20	---	>9.5	7						
21	---	>9.5	6						
22	---	>9.4	11						
23	---	>9.5	8						

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

* Height at 0.83 foF2.

Table 69

Port Lockroy (64.8° S, 63.5° W)									
October 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	9.2	31	305			---		2.40	
01	8.8	30	320			---	1.0	2.35	
02	8.1	30	345			---	1.1	2.30	
03	8.1	31	350			---	1.1	2.25	
04	8.0	31	340			---	1.3	2.35	
05	8.8	31	295			2.0		2.35	
06	9.6	30	255			2.4		2.50	
07	10.0	31	245			2.9		2.55	
08	10.4	31	240			(3.1)	3.1	2.60	
09	10.7	31	235			(3.4)	3.5	2.70	
10	11.4	30	240			(3.5)	3.6	2.60	
11	12.3	31	235			3.6		2.70	
12	12.4	31	240			3.6		2.70	
13	12.2	30	240			3.6		2.70	
14	11.9	31	240			3.6		2.70	
15	11.5	31	245			3.4		2.70	
16	11.0	31	245			3.2		2.75	
17	10.9	31	245			2.9		2.75	
18	10.8	31	255			2.5		2.80	
19	10.6	31	260			2.1		2.80	
20	10.6	31	270			1.7	1.6	2.65	
21	10.1	30	275			---	1.1	2.55	
22	9.9	30	290			---		2.45	
23	9.8	30	305			---		2.40	

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 71

Terre Adelle (66.7° S, 140.0° E)									
January 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	>5.5	19	320			---	(1.45)	3.1	(2.60)
01	5.5	17	305			---	1.50	3.6	(2.45)
02	5.4	14	300			---	110	(1.60)	3.4
03	<475	(5.4)	14	285	(3.5)	110	(2.20)	3.1	(2.40)
04	(510)	5.3	14	270	4.0	110	(2.45)	3.1	(2.50)
05	(525)	5.5	17	250	4.2	110	(2.90)	3.2	(2.40)
06	(540)	5.8	15	240	4.5	110	(3.15)	3.4	(2.30)
07	(570)	6.2	10	240	4.9	100	3.55		---
08	550	(6.5)	9	(240)	(5.0)	100	(3.55)		---
09	560	(6.2)	11	(225)	5.0	100	>3.70		---
10	540	>6.5	12	---	5.0	100	---		(2.25)
11	545	6.8	12	(220)	5.1	100	>3.75		(2.25)
12	560	6.8	13	(210)	5.0	100	(3.75)		(2.25)
13	560	(6.5)	14	210	5.0	100	(3.75)		(2.20)
14	570	6.5	19	210	5.0	100	(3.60)		2.20
15	565	6.3	20	210	5.0	100	(3.55)	3.8	2.25
16	530	6.5	20	230	4.9	105	(3.35)	3.6	(2.30)
17	510	6.6	22	235	4.7	110	3.15	3.3	2.30
18	455	6.4	18	245	4.5	110	(2.90)	3.1	2.45
19	460	6.5	19	260	4.2	110	(2.60)	3.1	2.45
20	(430)	(6.4)	18	275	(3.8)	110	2.25	3.2	(2.40)
21	---	6.0	17	300	---	---	(1.70)	3.1	2.50
22	---	(5.9)	16	300	---	---	<1.60	4.2	(2.50)
23	---	>5.5	14	310	---	---	1.40	3.9	(2.50)

Time: 135.0°E.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 68

Lindau/Harz, Germany (51.6° N, 10.1° E)									
November 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	5.03	29	299						2.53
01	5.10	27	300						2.56
02	4.85	26	287				2.7		2.56
03	4.56	29	281						2.62
04	4.30	28	268						2.78
05	4.15	27	258						2.76
06	3.79	29	240						2.80
07	4.80	29	246						2.70
08	8.78	30	230			---	E		3.02
09	12.15	30	224			112	2.48	3.5	3.04
10	14.00	30	227			110	2.80	3.6	3.02
11	14.68	30	228			108	3.02	4.0	2.96
12	14.60	30	229			110	3.08	3.6	2.92
13	14.50	30	227			---	3.04	3.6	2.84
14	14.30	30	230			---	2.89	3.7	2.87
15	14.00	30	234			---	2.54	3.5	2.88
16	13.39	30	230			---	2.03	3.4	2.88
17	12.22	29	222			---	---	3.3	2.90
18	10.50	29	221			---	---	3.3	2.90
19	8.45	30	230					2.8	2.88
20	6.94	30	228						2.89
21	5.88	30	246						2.75
22	5.30	29	265						2.68
23	5.05	29	290						2.55

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 70

Kerguelen I. (49.4° S, 70.3° E)									
January 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00	3.4	27	350			---	E	1.9	2.30
01	3.2	26	365			---	E	1.8	2.20
02	2.9	25	380			---	E	1.6	2.20
03	3.1	25	400			---	E	2.5	(2.15)
04	---	3.6	24	400		---	1.05	1.5	(2.15)
05	(600)	4.8	19	320	3.5	110	1.85	2.1	(2.15)
06	600	5.5	25	270	4.2	110	2.70		2.20
07	590	6.0	26	250	4.8	110	3.25		2.10
08	595	6.6	28	245	5.0	110	3.50		2.05
09	590	6.7	25	240	5.1	110	3.75		2.10
10	610	7.0	22	230	5.2	110	4.00	4.4	2.10
11	590	>7.2	18	235	5.5	110	4.10	4.4	2.10
12	590	>7.4	14	<240	5.5	110	4.05	4.5	2.15
13	570	7.3	17	235	5.6	110	4.00	4.4	2.20
14	610	6.8	24	240	5.5	110	3.90	4.3	2.10
15	580	7.2	25	240	5.4	110	3.80	4.0	2.15
16	555	7.0	26	240	5.3	110	3.65	3.9	2.20
17	540	6.8	30	245	5.1	110	3.40		2.25
18	460	6.6	30	255	5.0	110	3.00		2.40
19	---	6.3	30	270	---	115	2.50		2.55
20	5.9	27	295			110	1.40	2.3	2.60
21	5.0	29	310			---	E	1.7	2.55
22	4.8	28	305			---	E	2.5	2.40
23	4.2	29	310			---	E	1.6	2.30

Time: 75.0°E.

Sweep: 0.88 Mc to 14.14 Mc in 10 minutes, automatic operation.

Table 72

Lwiro, Belgian Congo (2,3° S, 28,8° E)								January 1955	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	foEs	(M3000)F2	
00		3,8	25	240				3,07	
01		3,2	25	260				2,97	
02		3,0	24	260			1,6	3,15	
03		3,1	23	270			1,6	3,15	
04		2,8	22	255			1,5	3,28	
05		2,5	19	250			1,7	3,24	
06		3,4	26	240			1,7	3,40	
07	250	5,5	28	225	---	117	2,10	2,8	
08	290	6,0	29	210	4,0	111	2,70	2,9	
09	370	6,6	30	200	4,2	111	3,05		
10	440	7,4	31	200	4,4	111	3,25		
11	430	8,2	31	200	4,5	109	3,40		
12	400	9,2	31	190	4,5	109	3,50		
13	355	9,8	30	190	4,5	111	3,40		
14	330	10,0	29	200	4,4	111	3,35		
15	340	9,2	29	200	4,2	111	3,20		
16	360	8,8	28	205	4,1	111	2,90		
17	345	8,2	28	230	3,8	113	2,40		
18	325	7,9	28	250	---	1,70			
19		7,1	28	275			2,1		
20		7,2	27	280			1,8		
21		7,3	29	245			1,7		
22		6,6	29	215			1,8		
23		4,8	27	205					

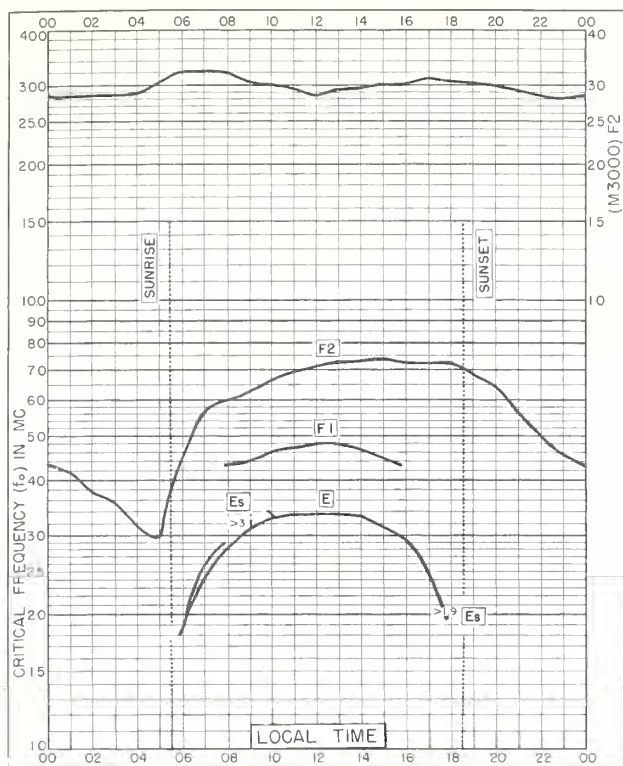


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W

APRIL 1961

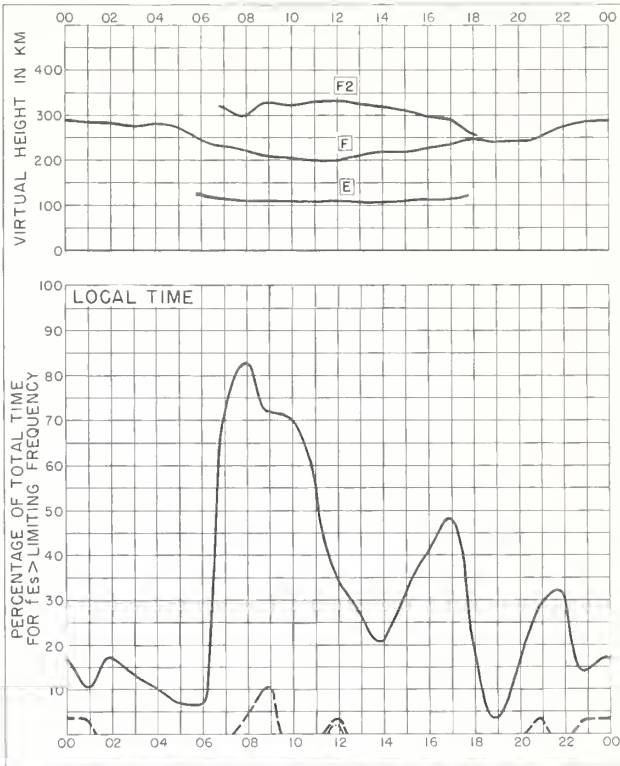


Fig. 2. WASHINGTON, D.C.

APRIL 1961

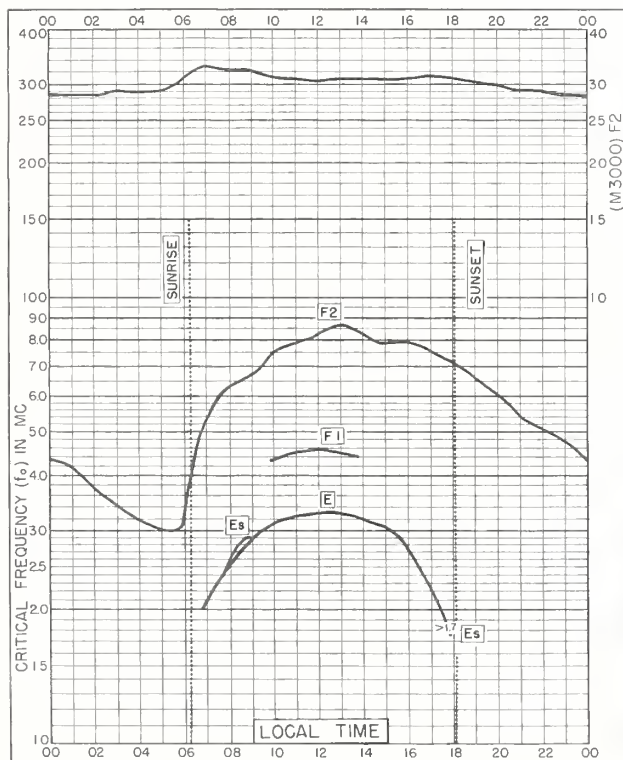


Fig. 3. WASHINGTON, D.C.
38.7°N, 77.1°W

MARCH 1961

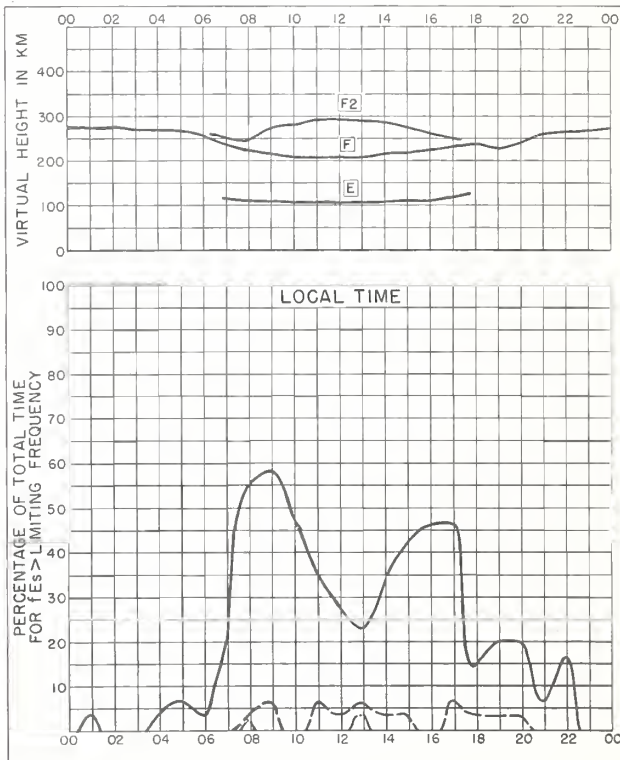


Fig. 4. WASHINGTON, D.C.

MARCH 1961

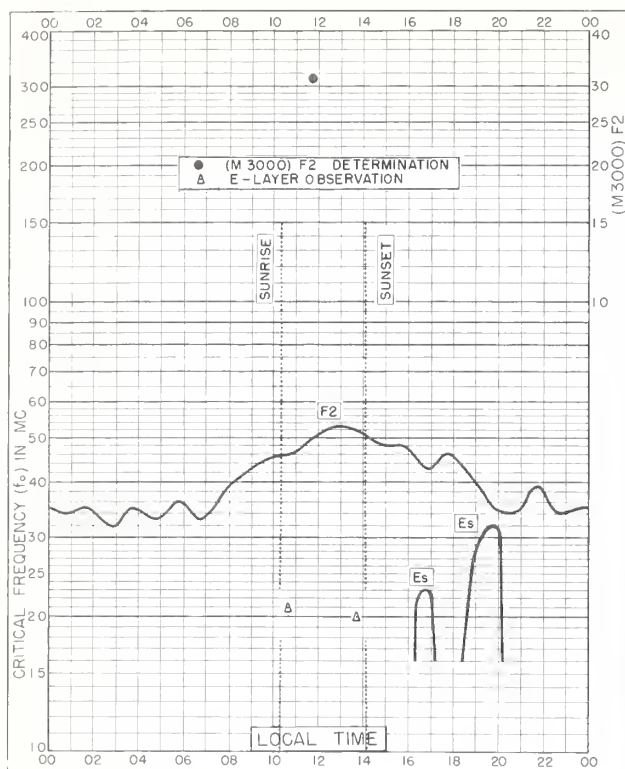


Fig. 5. RESOLUTE BAY, CANADA
74.7°N, 94.9°W
FEBRUARY 1961

NBS 503

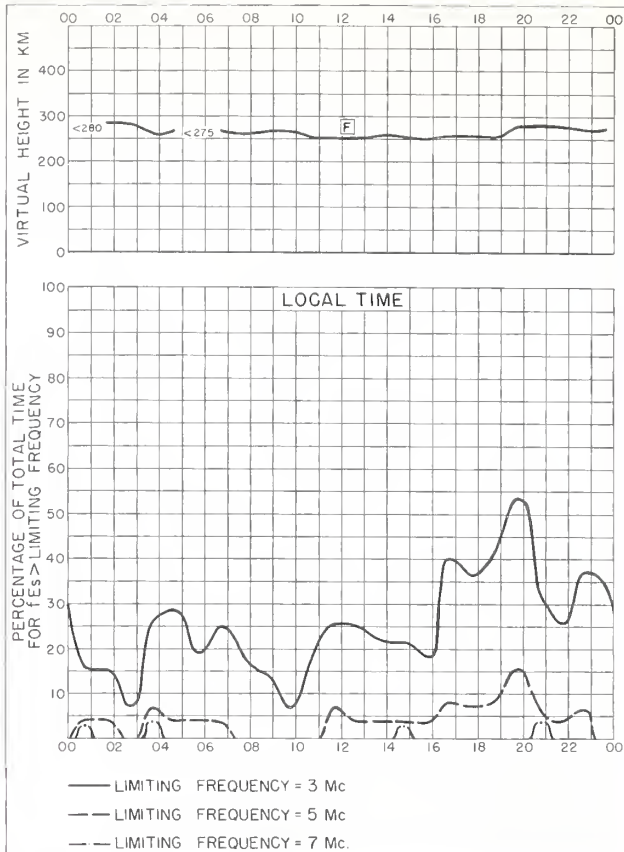


Fig. 6. RESOLUTE BAY, CANADA FEBRUARY 1961

NBS 490

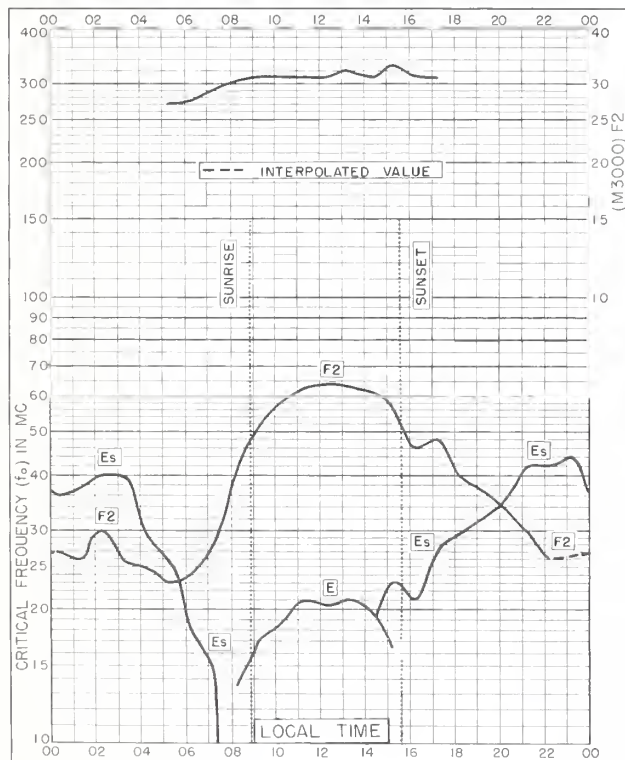


Fig. 7. TROMSØ, NORWAY
69.7°N, 19.0°E
FEBRUARY 1961

NBS 503

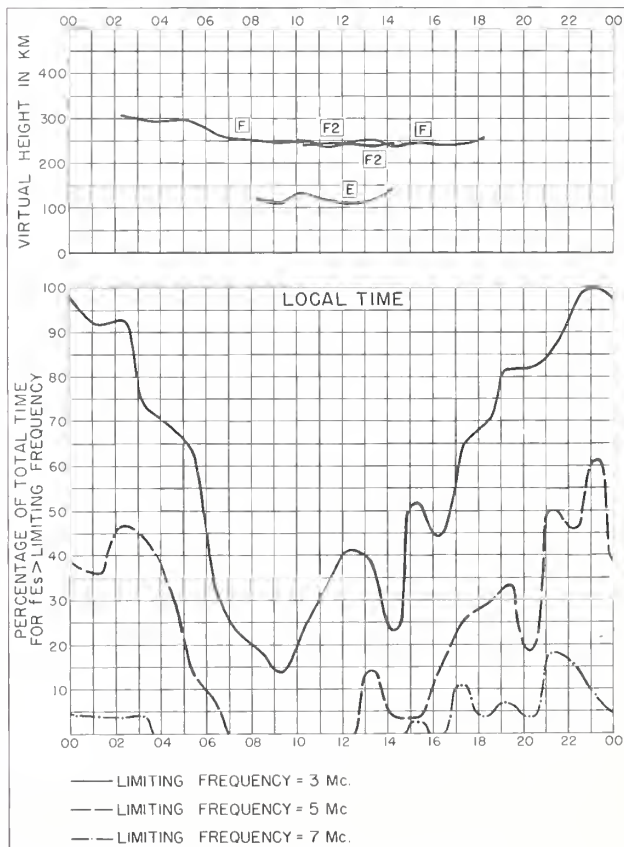


Fig. 8. TROMSØ, NORWAY
FEBRUARY 1961

NBS 490

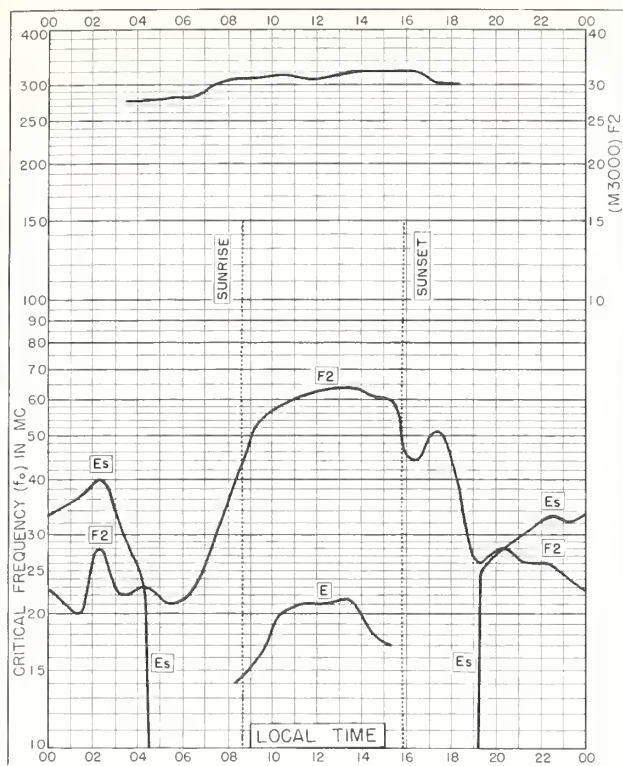


Fig. 9. KIRUNA, SWEDEN
67.8°N, 20.3°E
FEBRUARY 1961

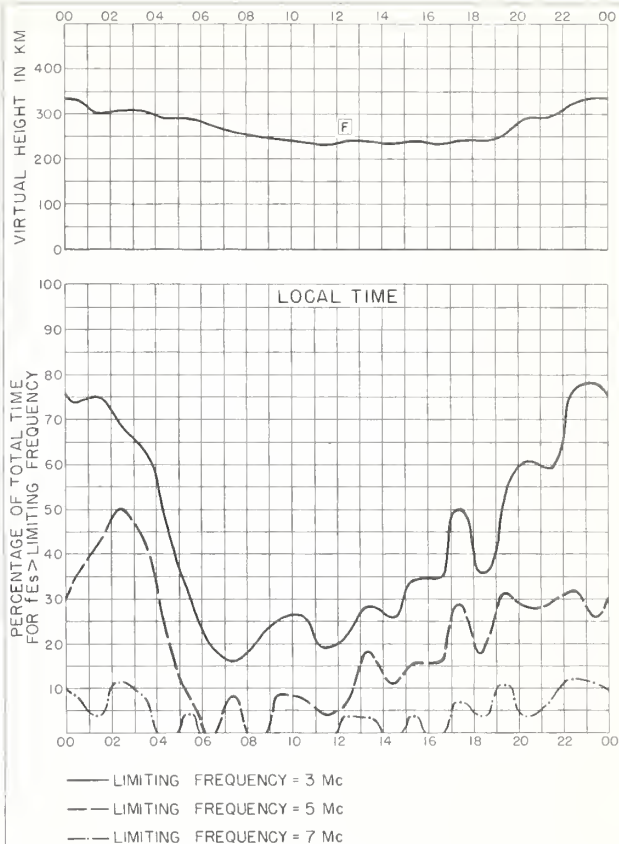


Fig. 10. KIRUNA, SWEDEN
FEBRUARY 1961

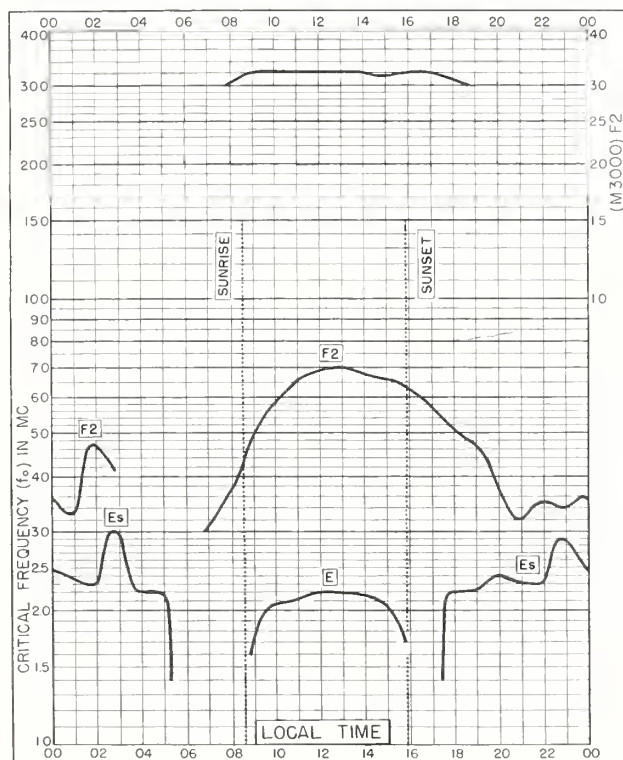


Fig. 11. SODANKYLÄ, FINLAND
67.4°N, 26.6°E
FEBRUARY 1961

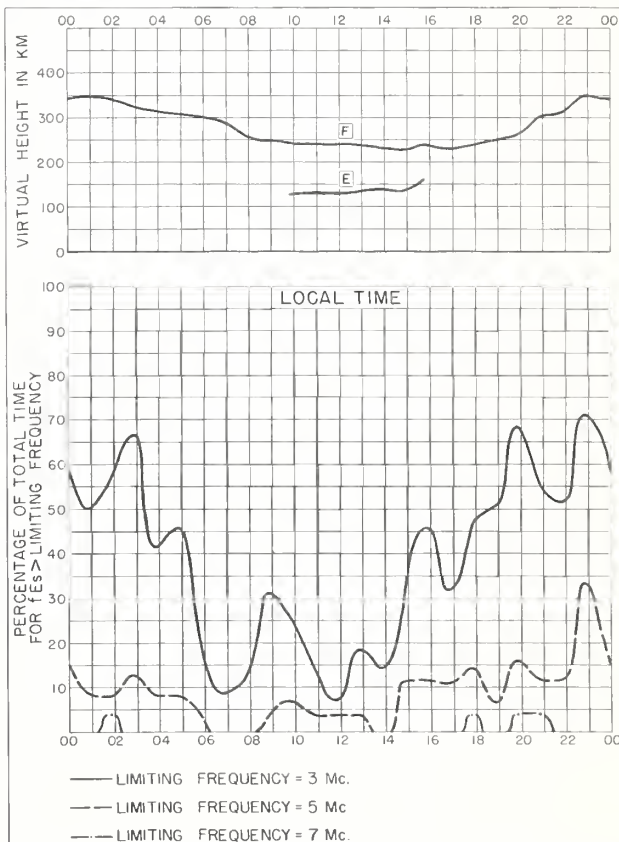


Fig. 12. SODANKYLÄ, FINLAND
FEBRUARY 1961

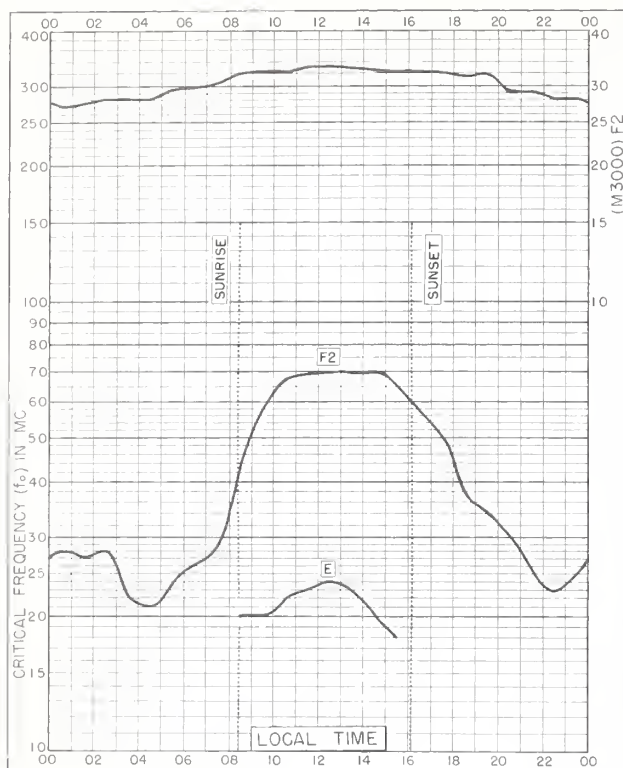


Fig. 13. LULEA, SWEDEN
65.6°N, 22.1°E

FEBRUARY 1961

NBS 503

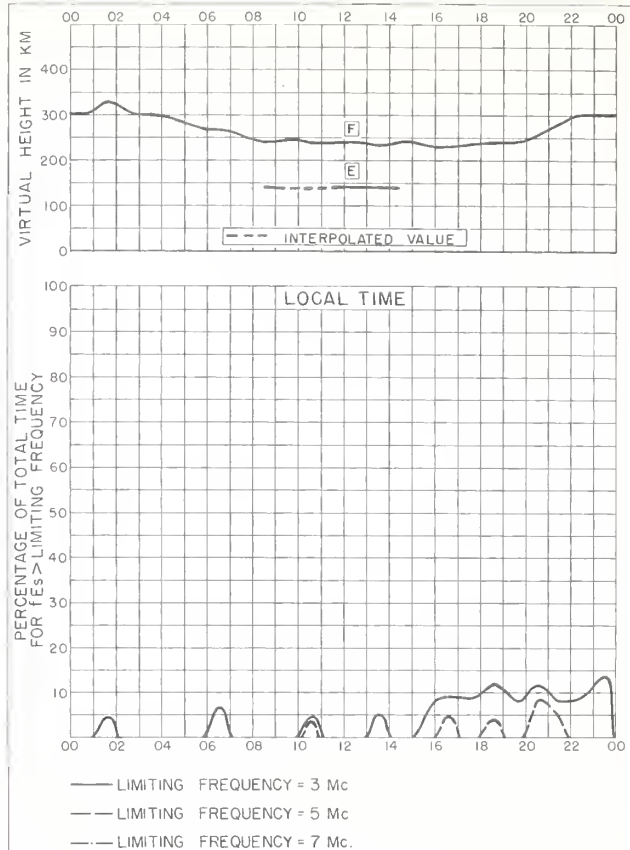


Fig. 14. LULEA, SWEDEN

FEBRUARY 1961

NBS 490

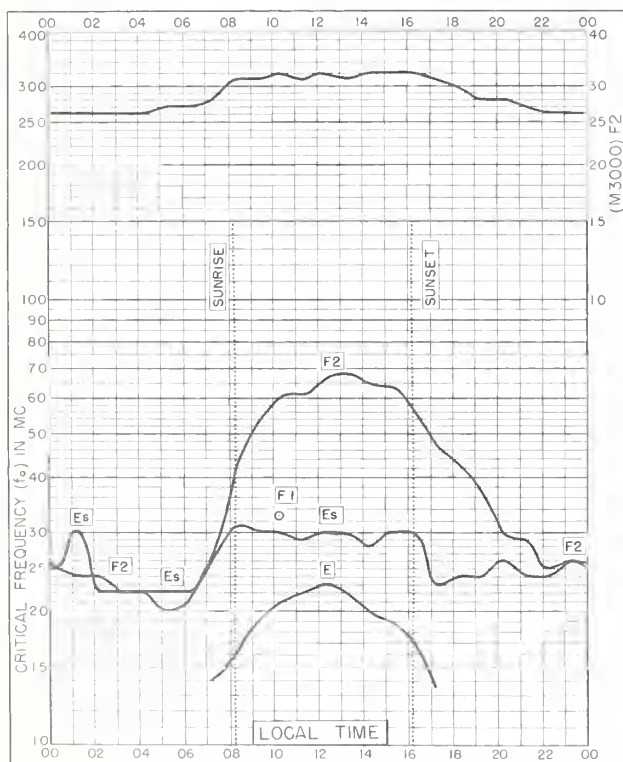


Fig. 15. LYCKSELE, SWEDEN
64.6°N, 18.8°E

FEBRUARY 1961

NBS 503

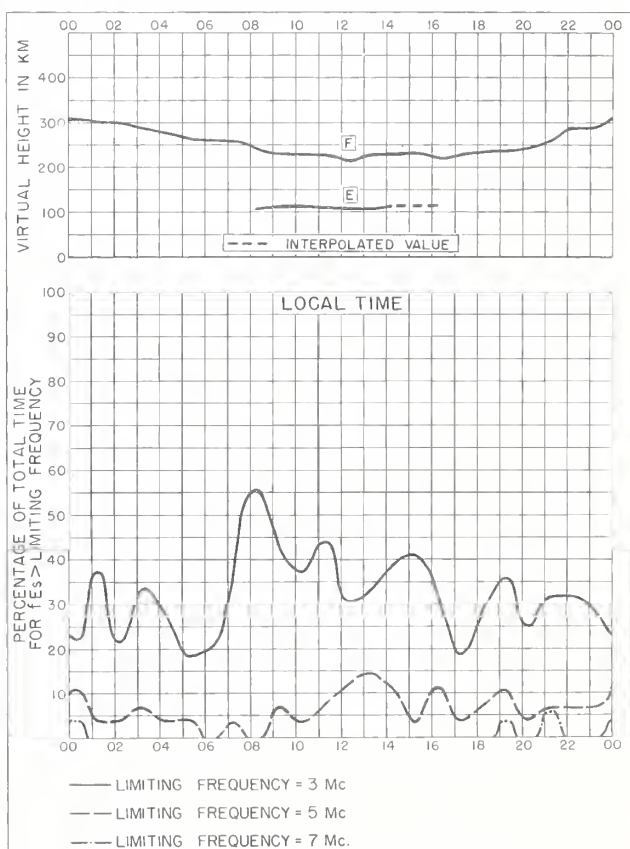
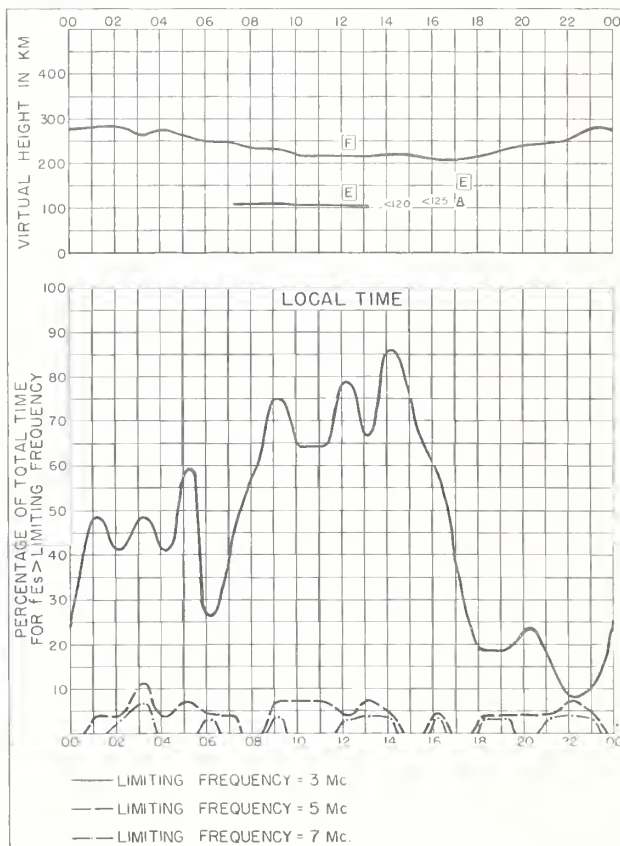
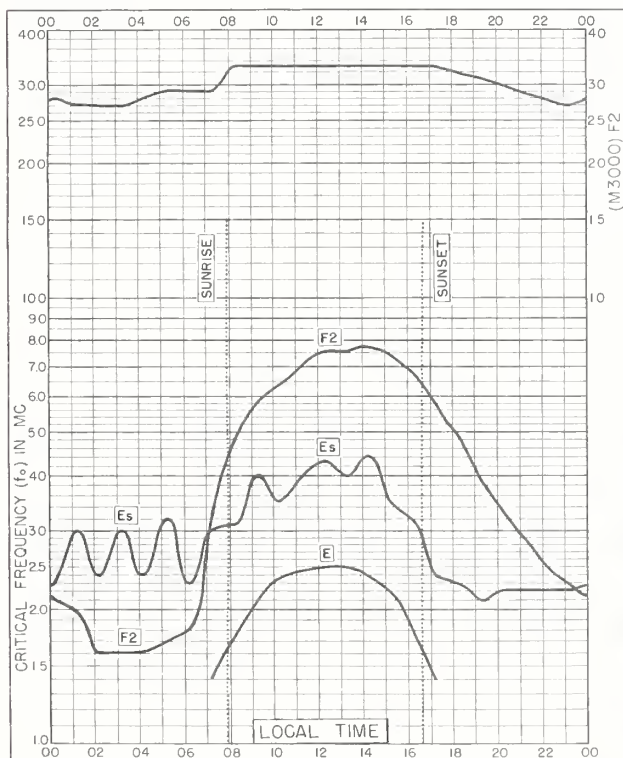
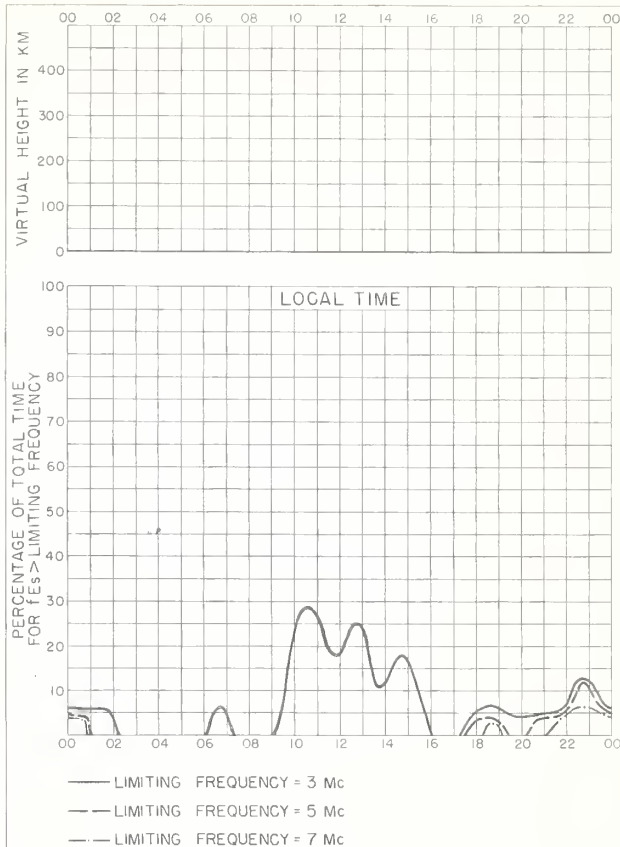
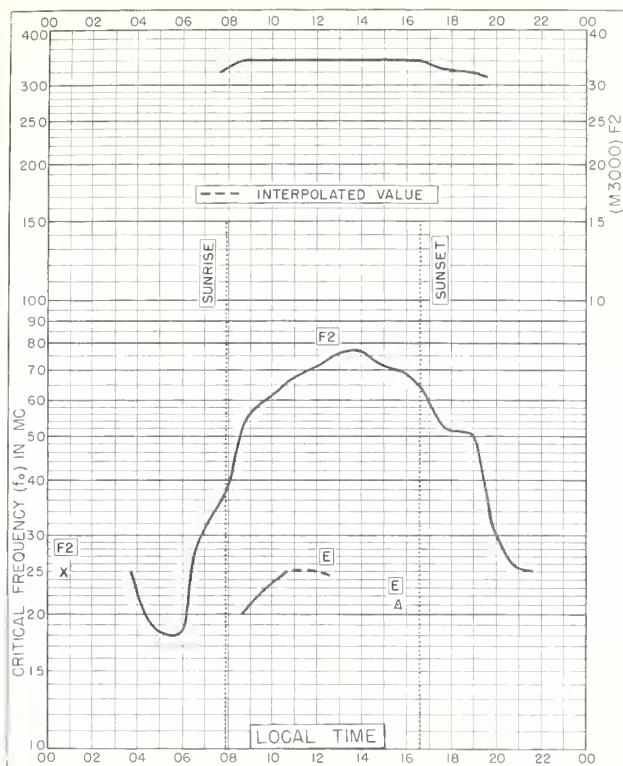
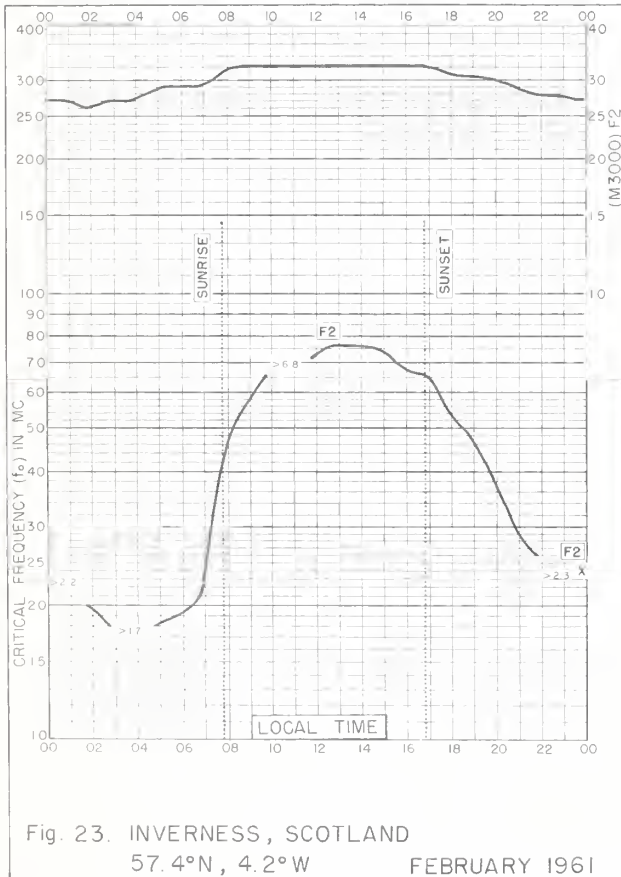
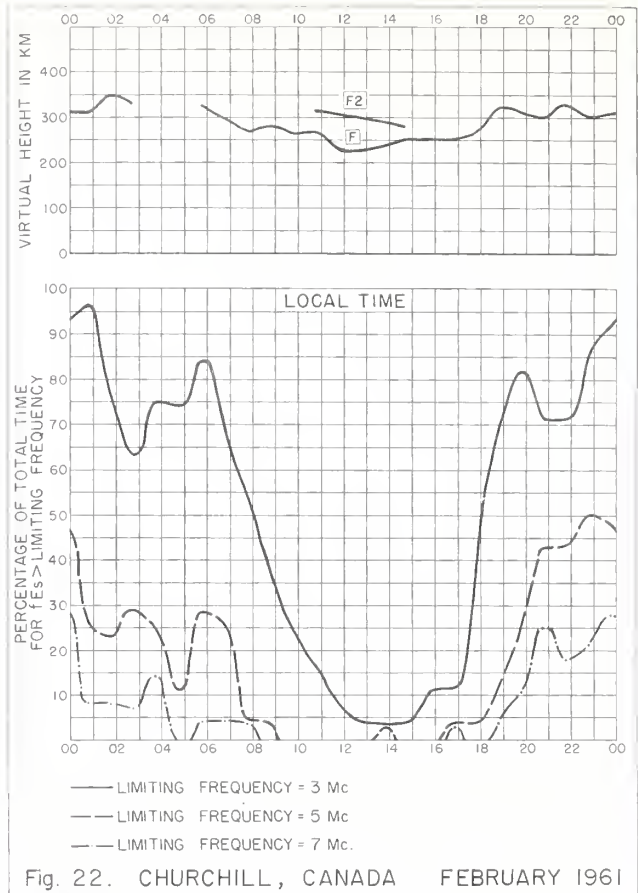
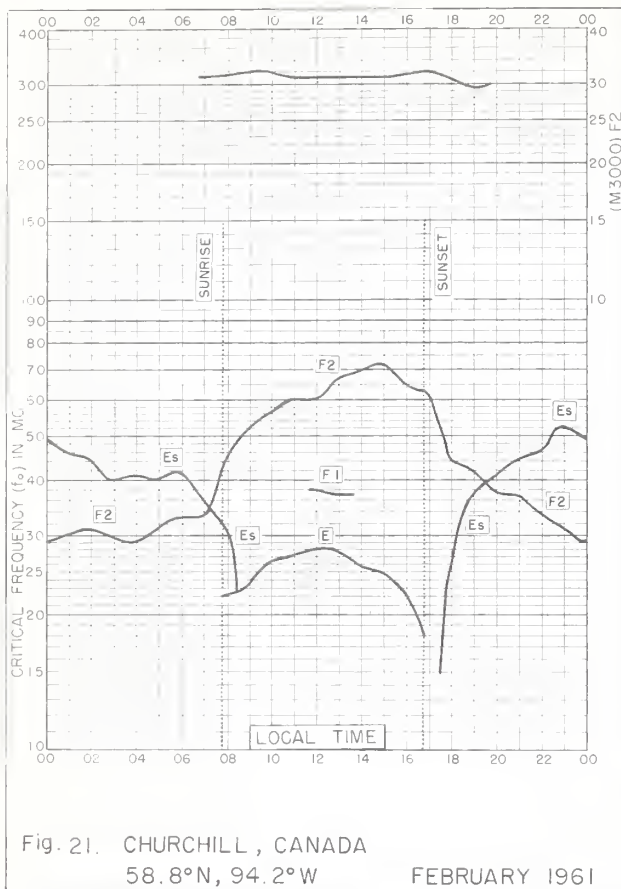


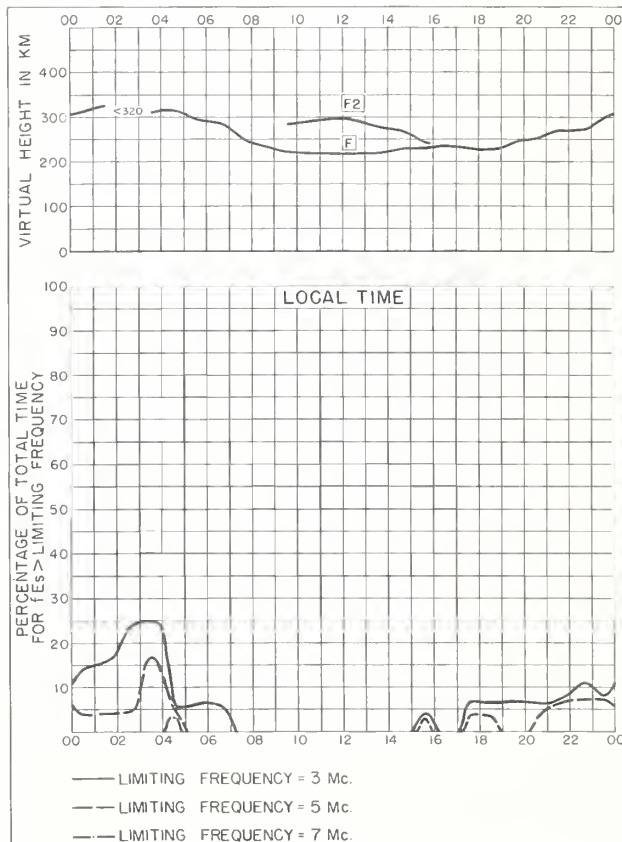
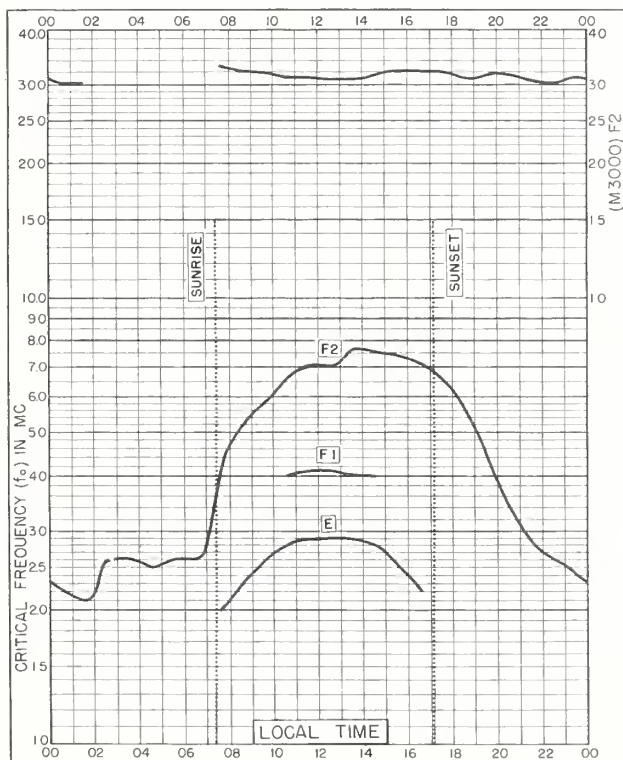
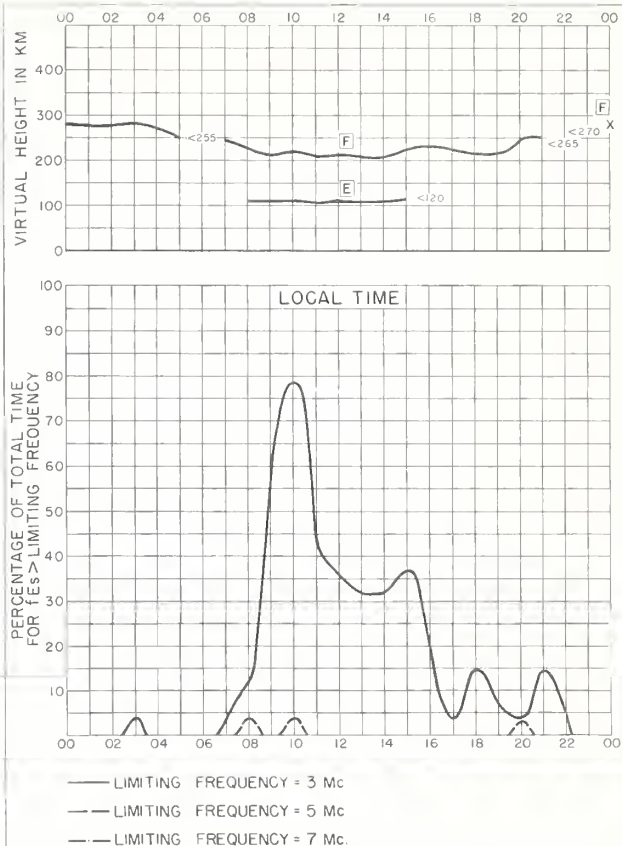
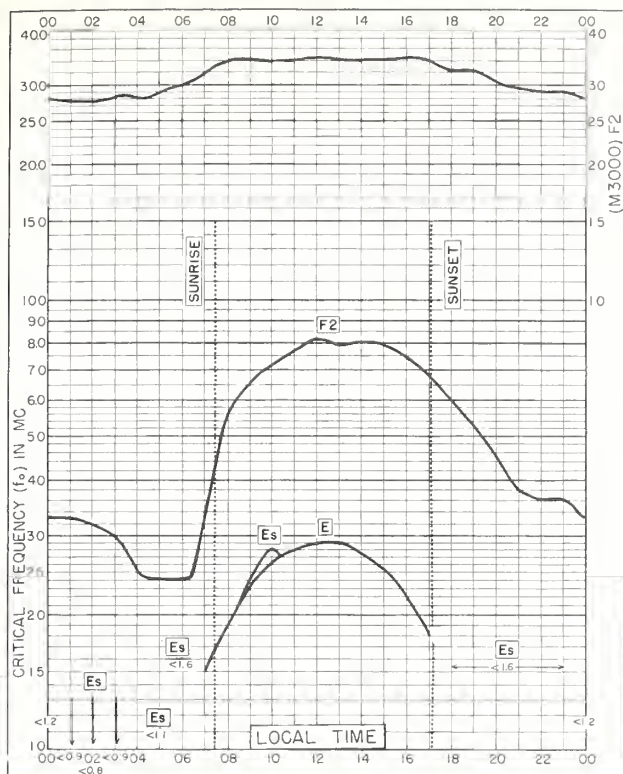
Fig. 16. LYCKSELE, SWEDEN

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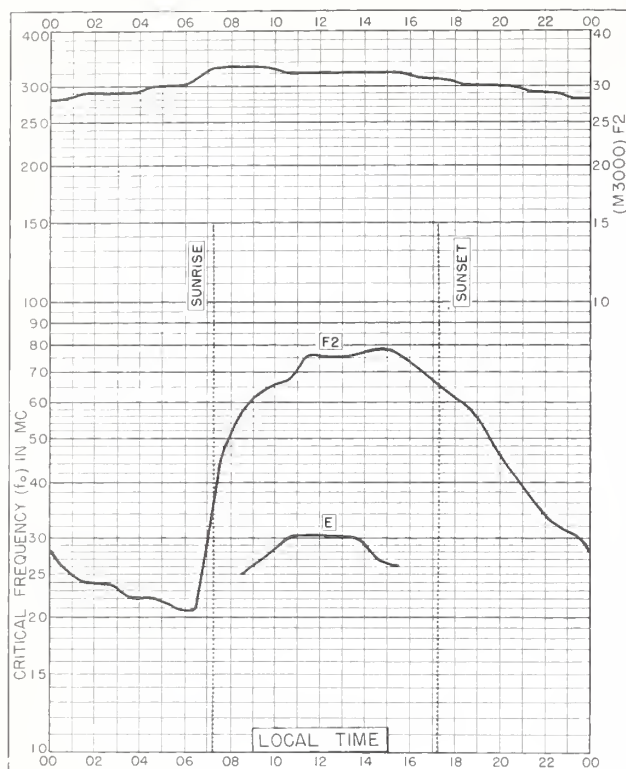


Fig. 28. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W
FEBRUARY 1961

NBS 503

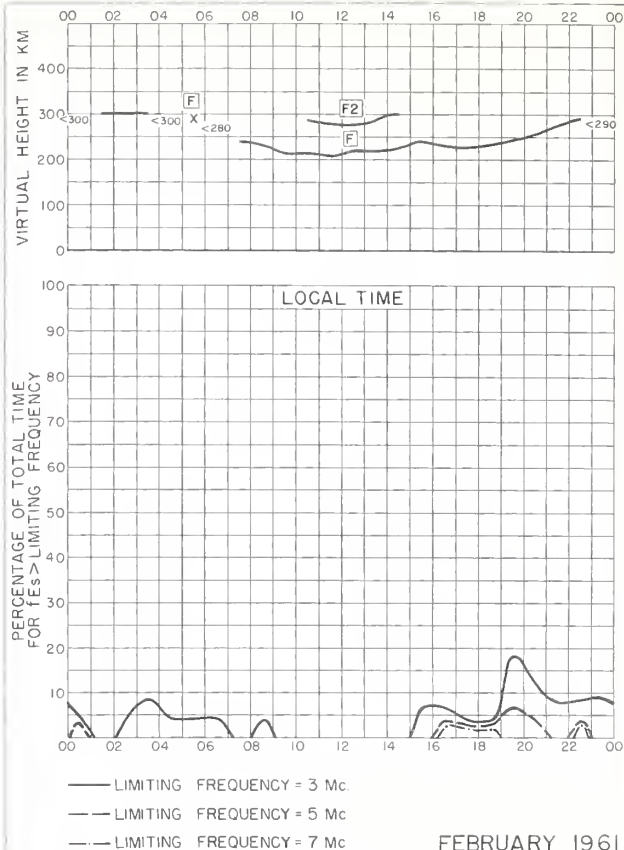


Fig. 29. ST. JOHN'S, NEWFOUNDLAND

FEBRUARY 1961

NBS 490

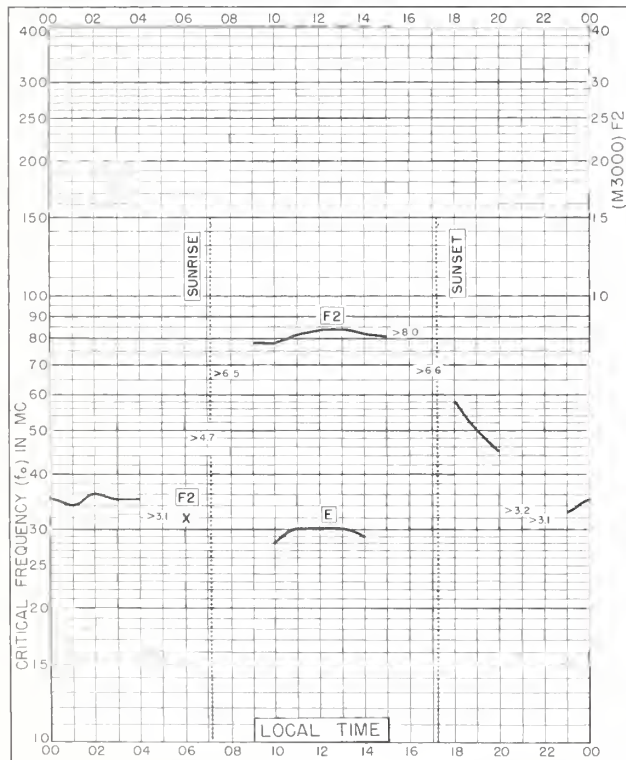


Fig. 30. GRAZ, AUSTRIA
47.1°N, 15.5°E
FEBRUARY 1961

NBS 503

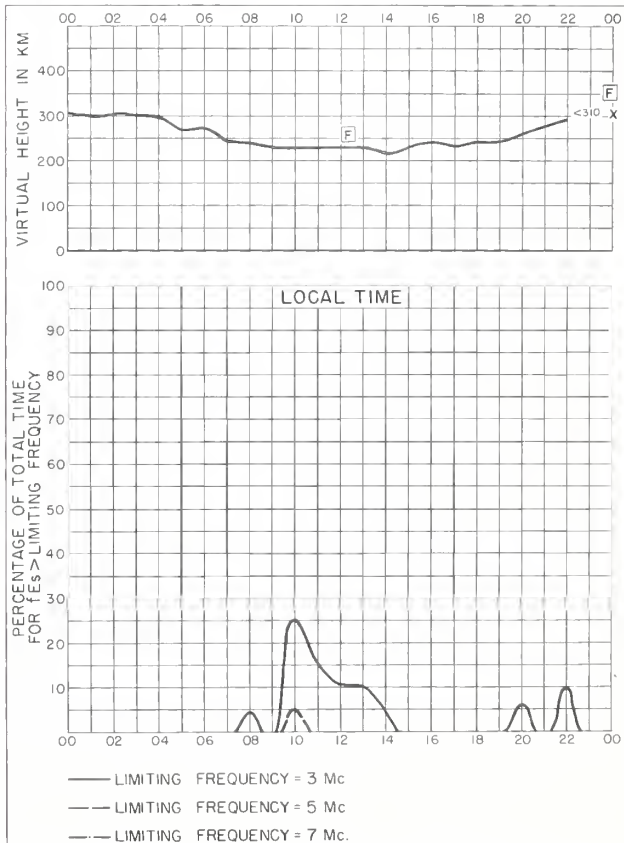
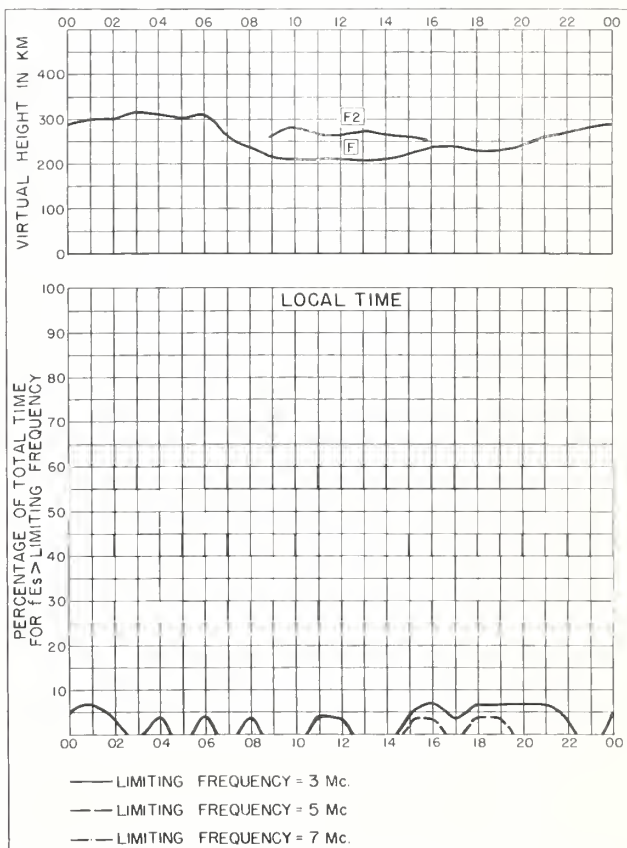
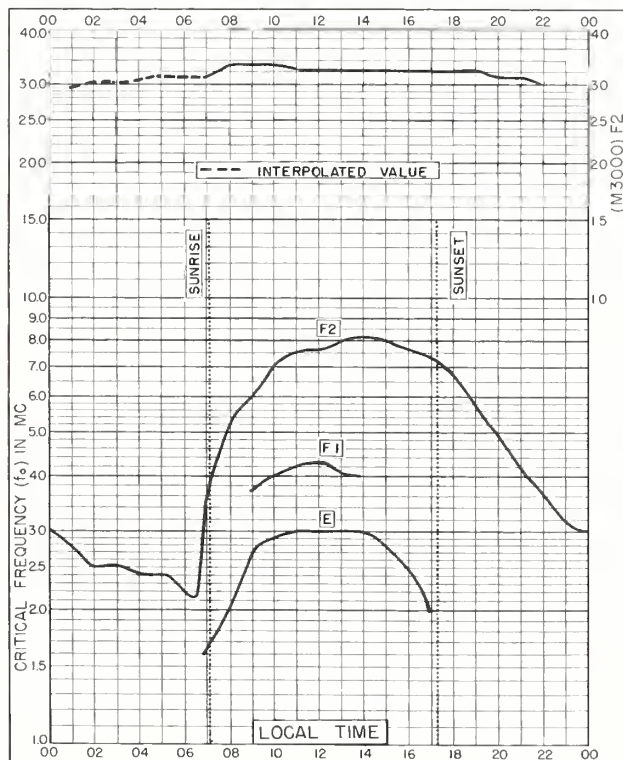
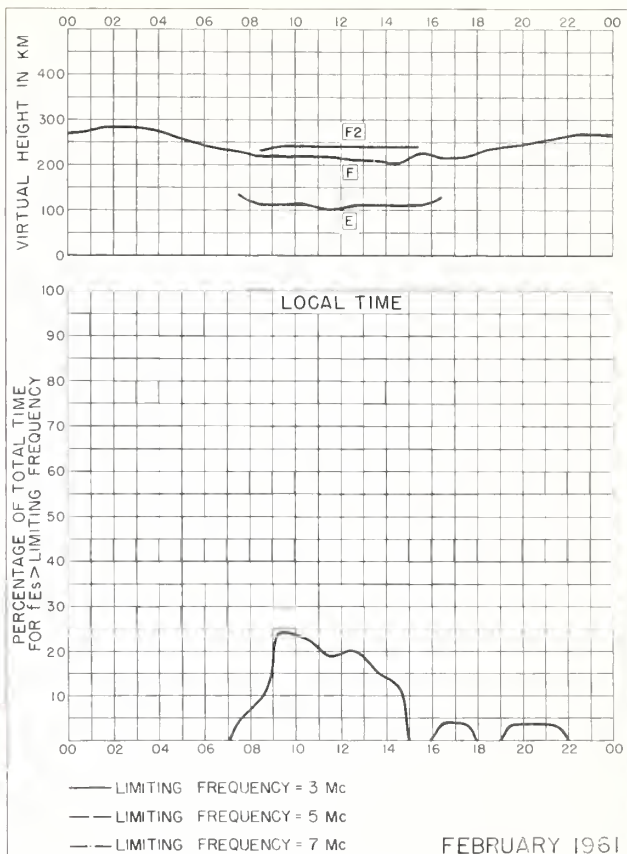
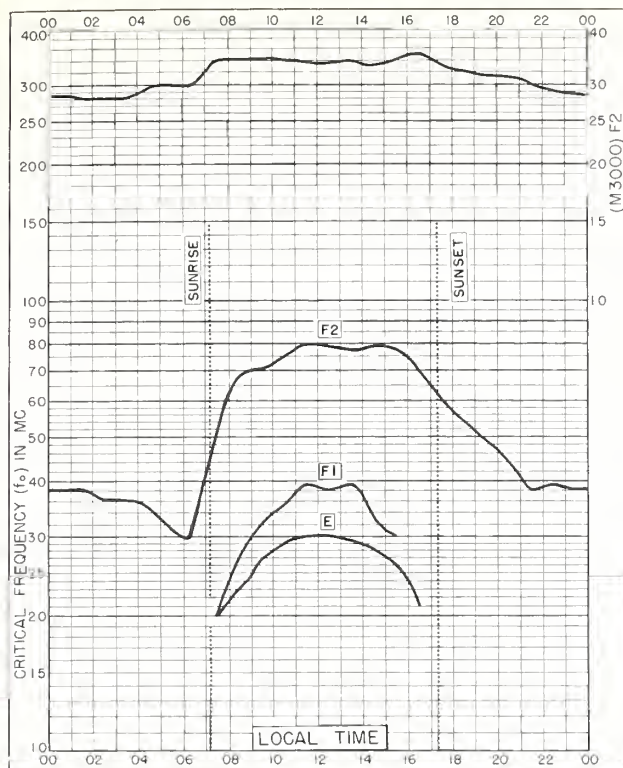


Fig. 31. GRAZ, AUSTRIA

FEBRUARY 1961

NBS 490



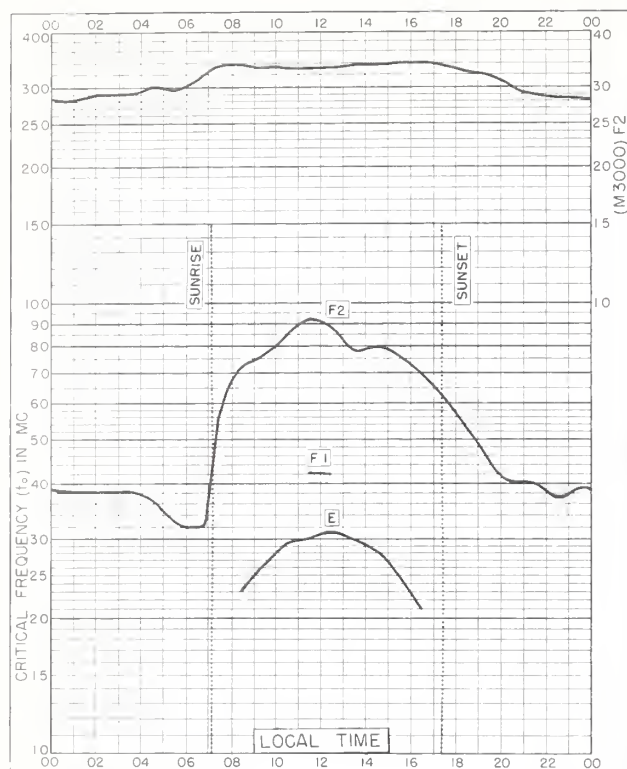


Fig. 36. WAKKANAI, JAPAN
45.4°N, 141.7°E

FEBRUARY 1961

NBS 503

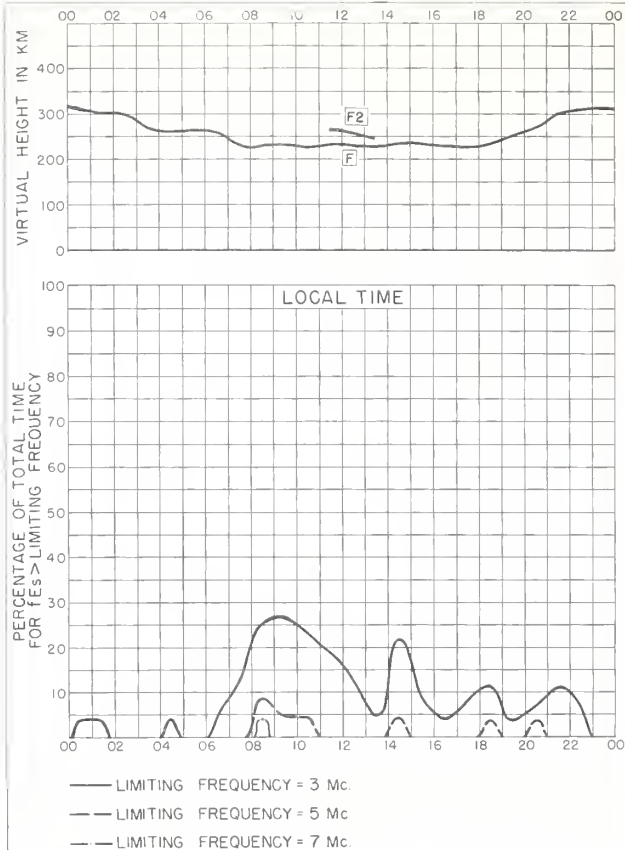


Fig. 37. WAKKANAI, JAPAN

FEBRUARY 1961

NBS 490

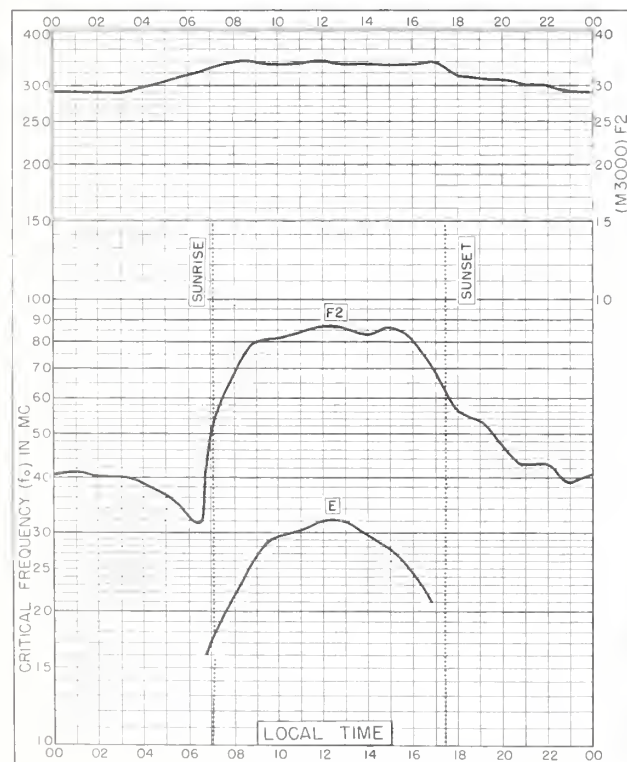


Fig. 38. ROME, ITALY
41.8°N, 12.5°E

FEBRUARY 1961

NBS 503

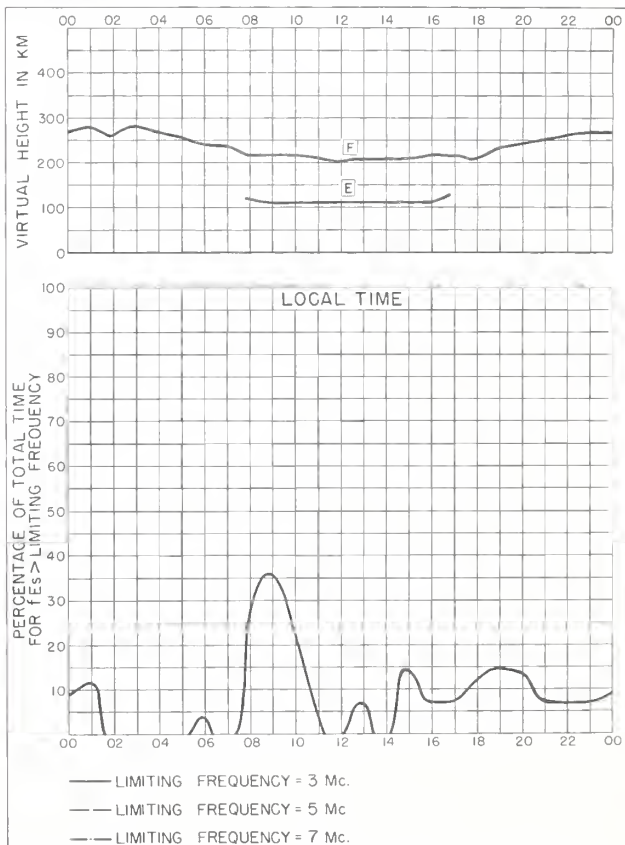


Fig. 39. ROME, ITALY

FEBRUARY 1961

NBS 490

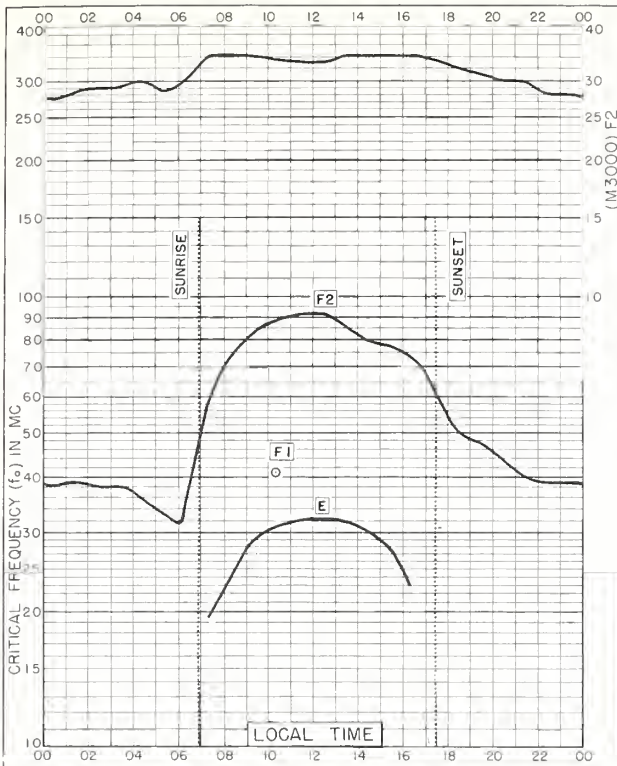


Fig. 40. AKITA, JAPAN
39.7°N, 140.1°E

FEBRUARY 1961

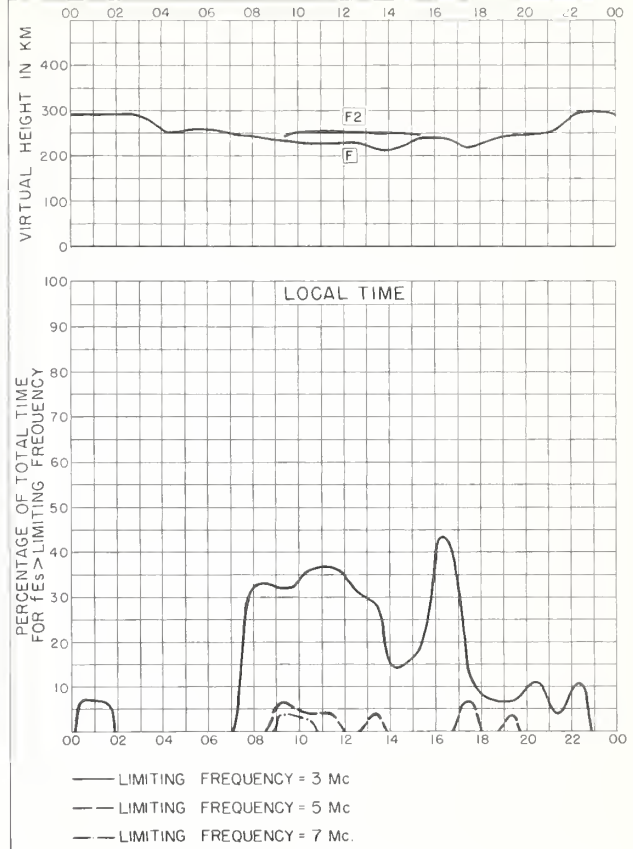


Fig. 41. AKITA, JAPAN

FEBRUARY 1961

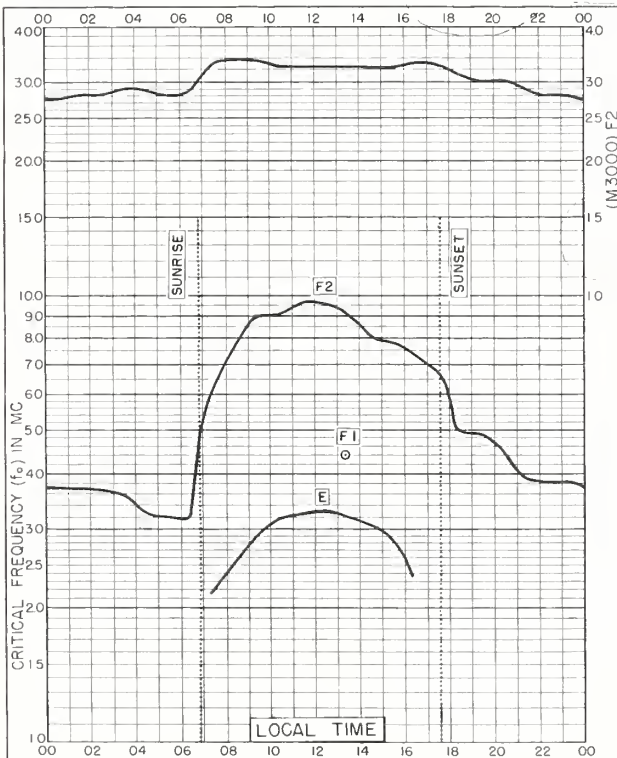


Fig. 42. TOKYO, JAPAN
35.7°N, 139.5°E

FEBRUARY 1961

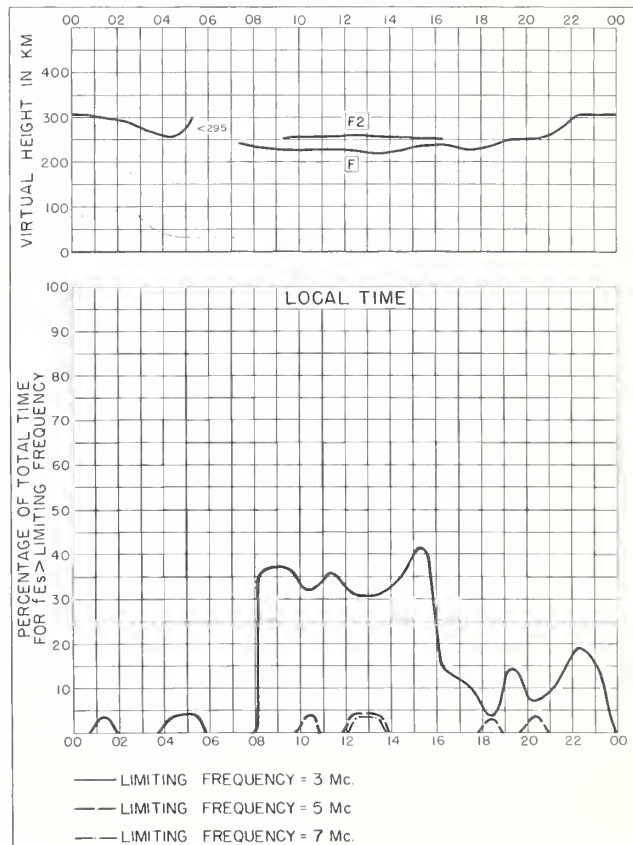


Fig. 43. TOKYO, JAPAN

FEBRUARY 1961

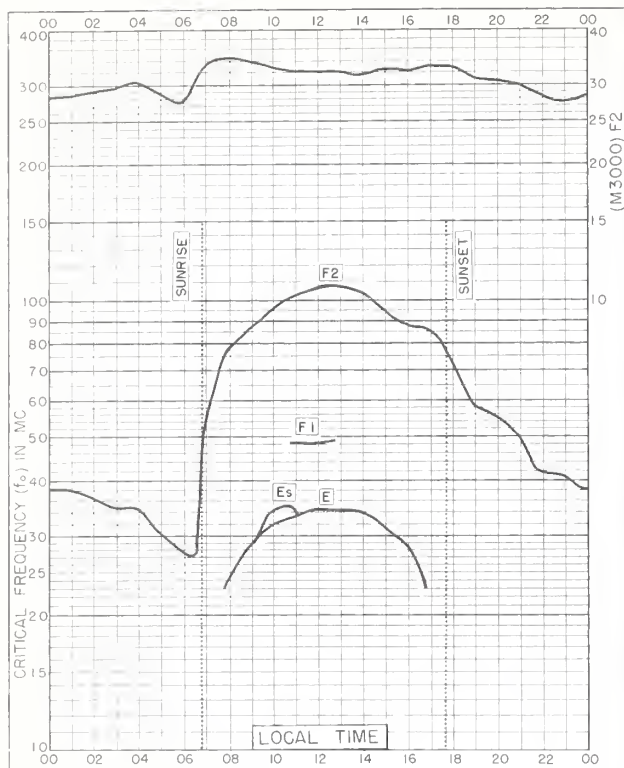


Fig. 44. YAMAGAWA, JAPAN
31.2°N, 130.6°E

FEBRUARY 1961

NBS 503

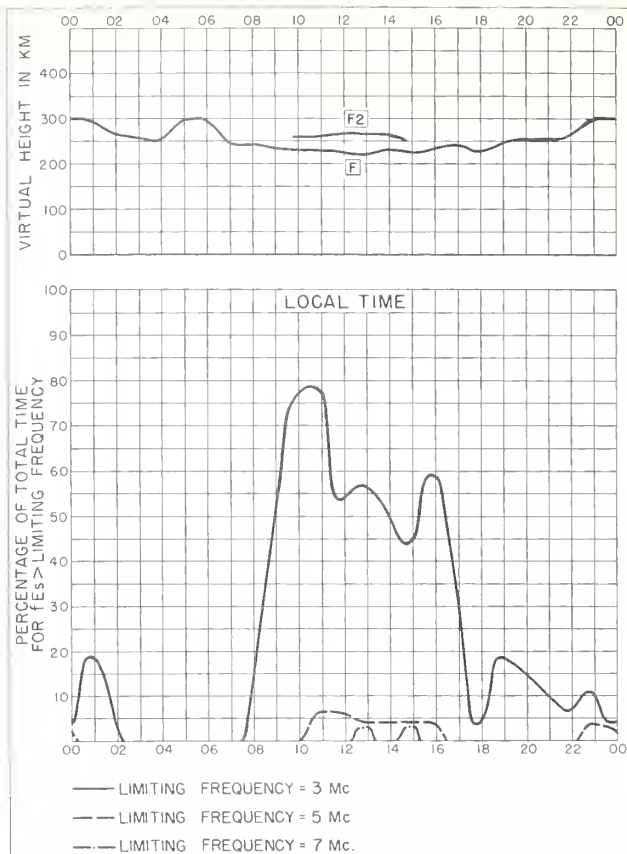


Fig. 45. YAMAGAWA, JAPAN

FEBRUARY 1961

NBS 490

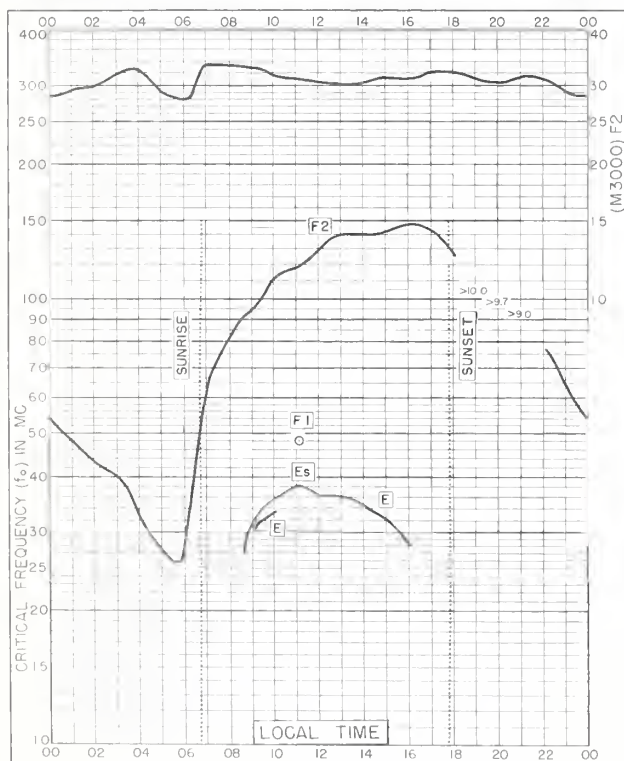


Fig. 46. FORMOSA, CHINA
25.0°N, 121.5°E

FEBRUARY 1961

NBS 503

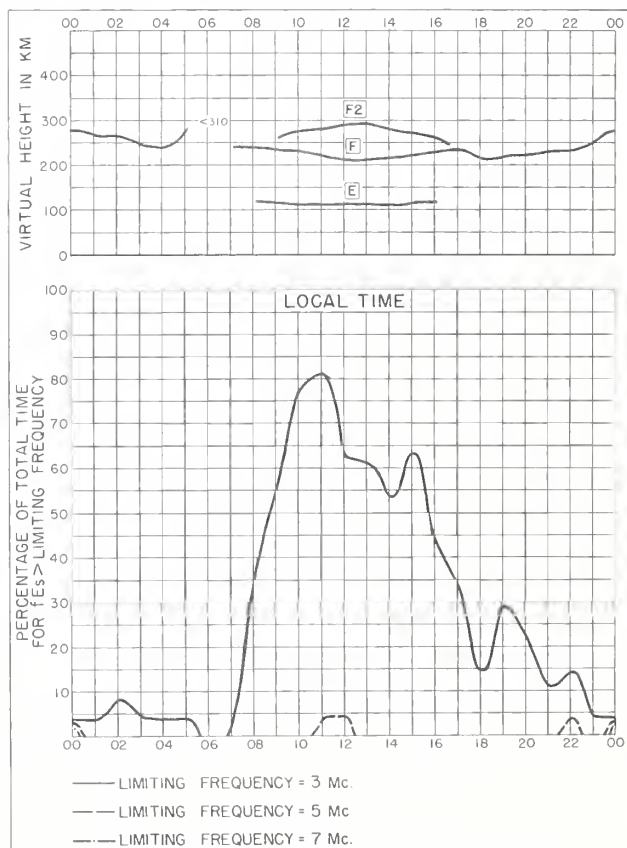


Fig. 47. FORMOSA, CHINA

FEBRUARY 1961

NBS 490

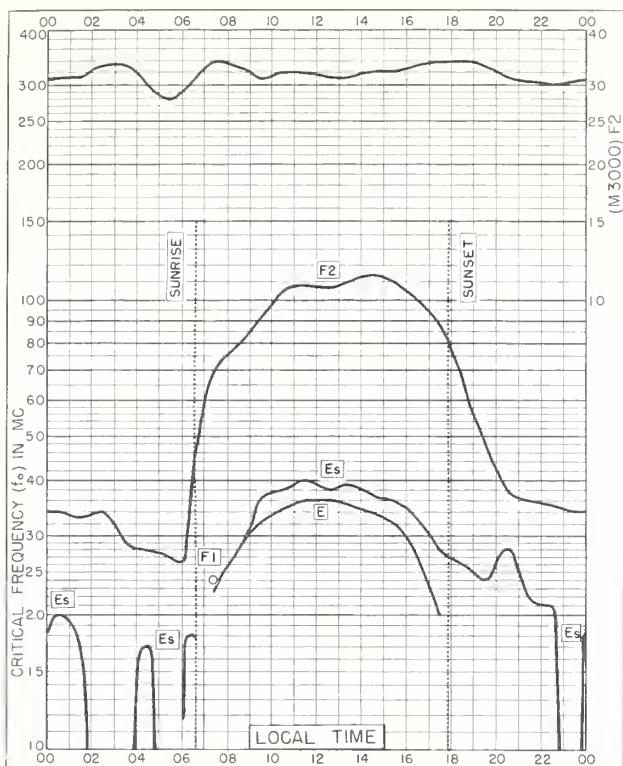


Fig. 48. EL CERILLO, MEXICO

19.3°N, 99.5°W

FEBRUARY 1961

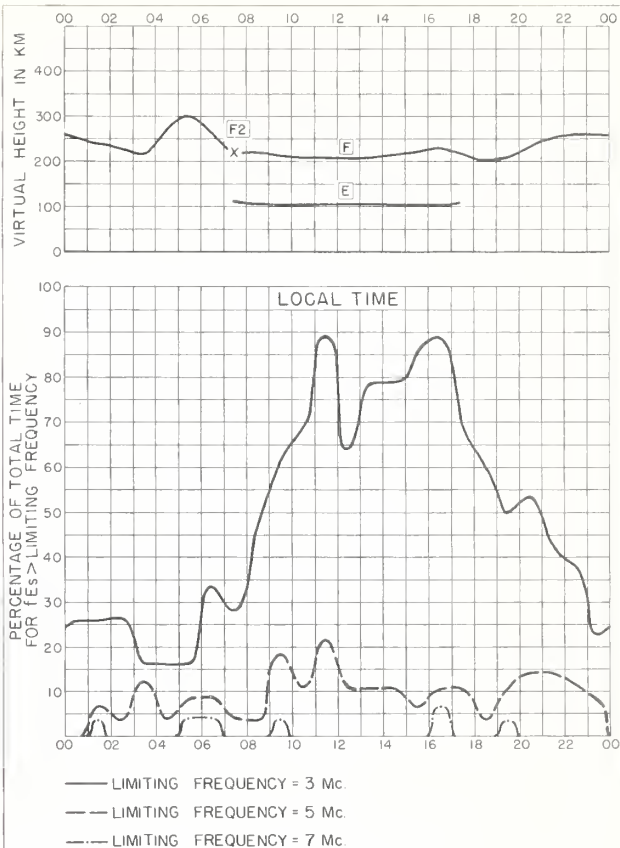


Fig. 49. EL CERILLO, MEXICO

FEBRUARY 1961

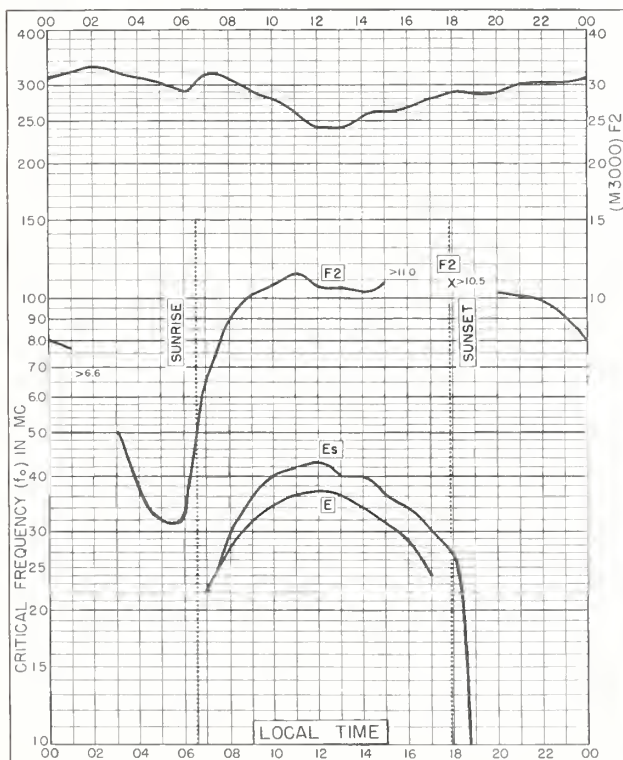


Fig. 50. BAGUIO, P. I.

16.4°N, 120.6°E

FEBRUARY 1961

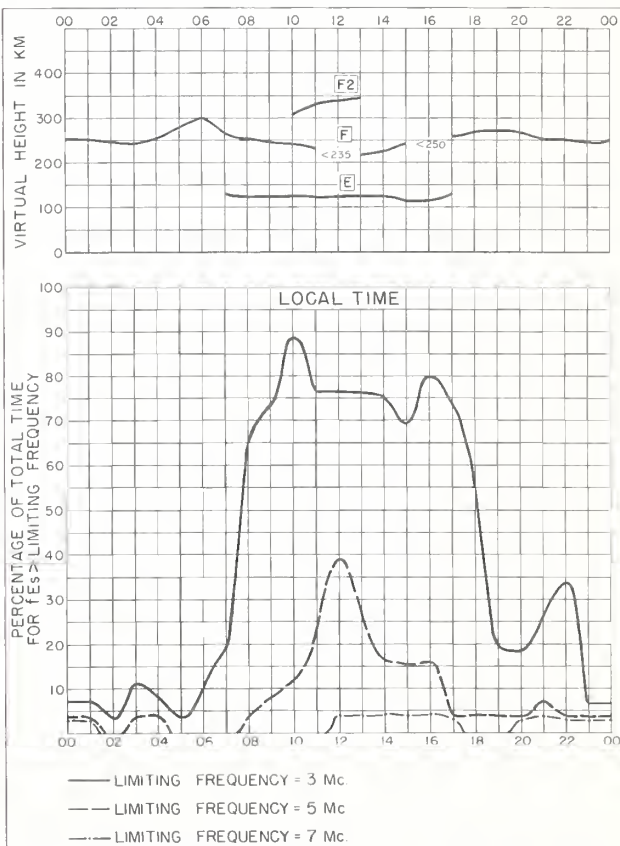


Fig. 51. BAGUIO, P. I.

FEBRUARY 1961

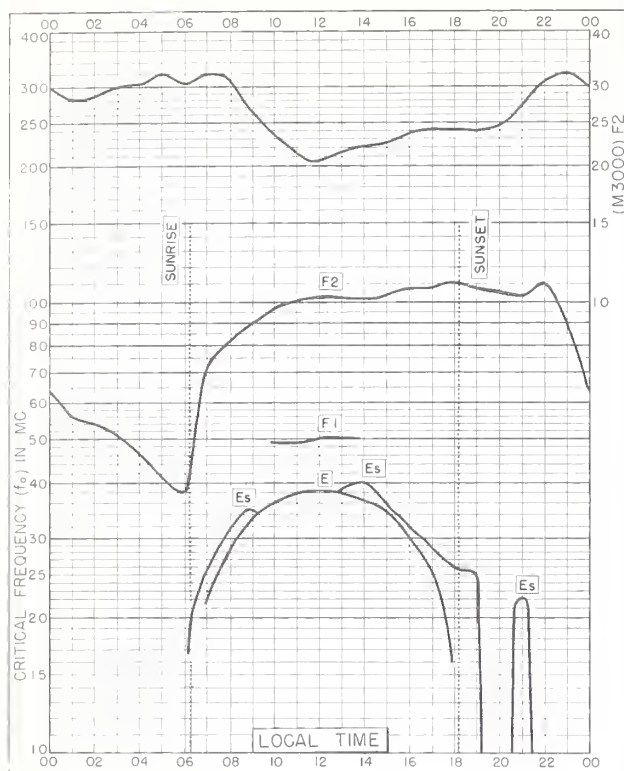


Fig. 52. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E
FEBRUARY 1961

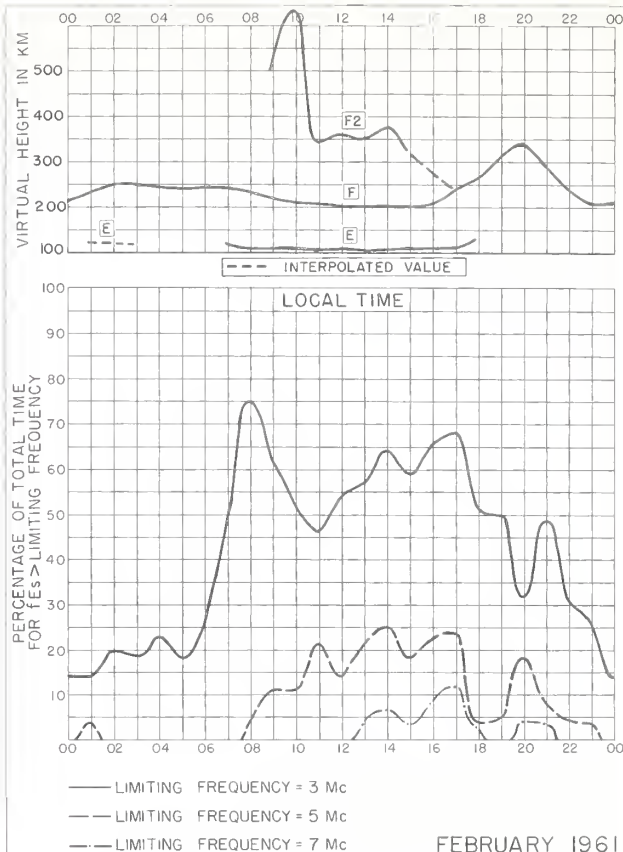


Fig. 53. SINGAPORE, BRITISH MALAYA

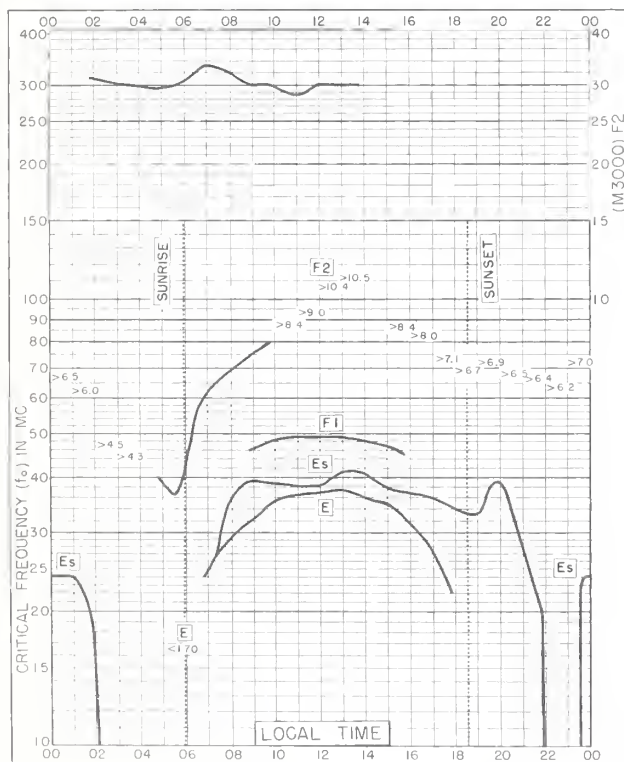


Fig. 54. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E
FEBRUARY 1961

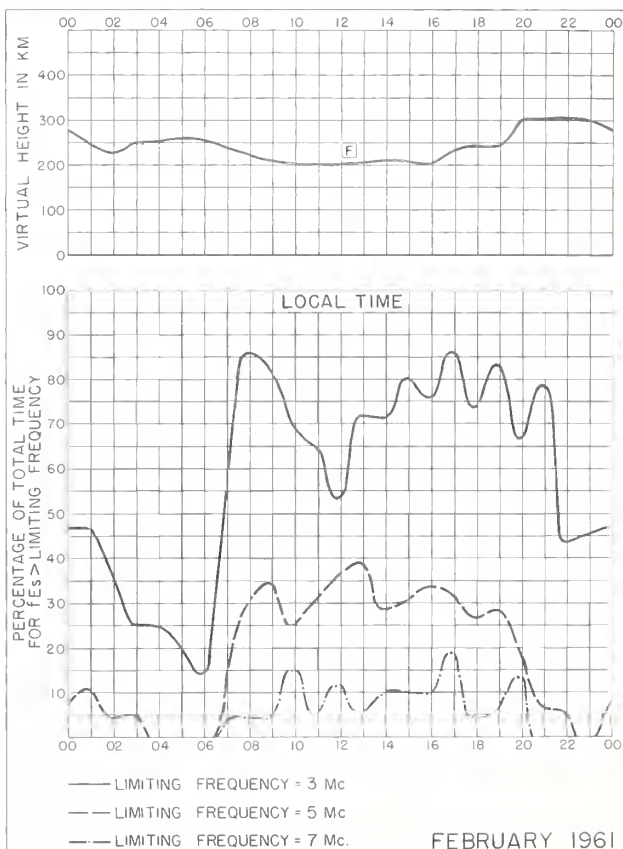


Fig. 55. TOWNSVILLE, AUSTRALIA

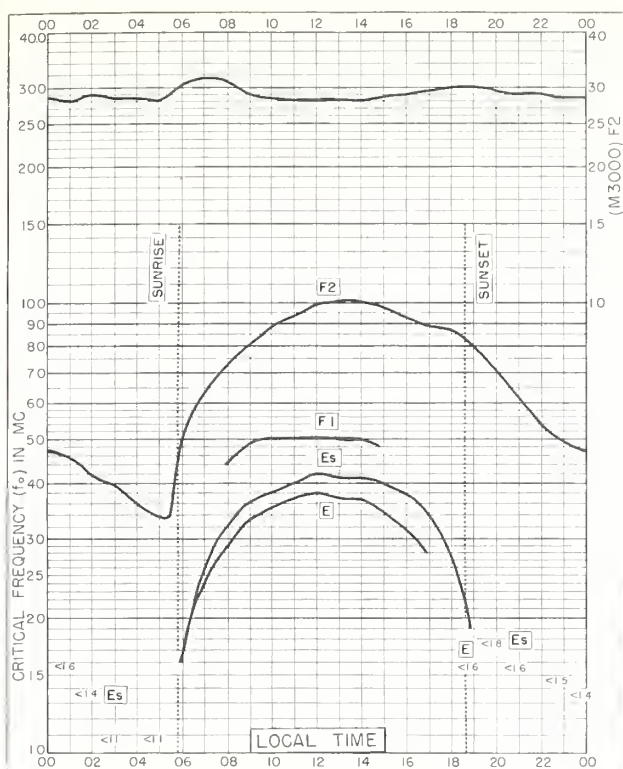


Fig. 56. JOHANNESBURG, UNION OF S. AFRICA
26.1°S, 28.1°E FEBRUARY 1961

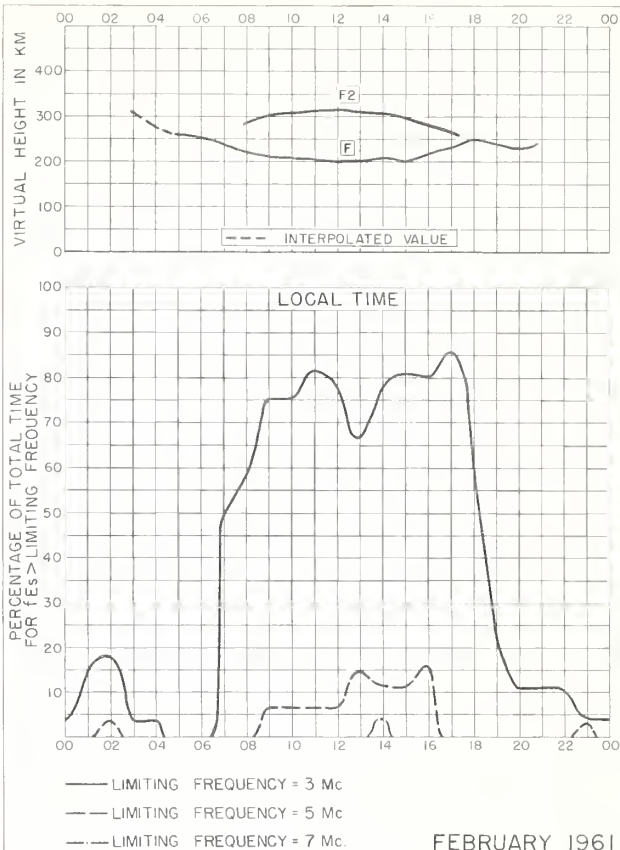


Fig. 57. JOHANNESBURG, UNION OF S. AFRICA
FEBRUARY 1961

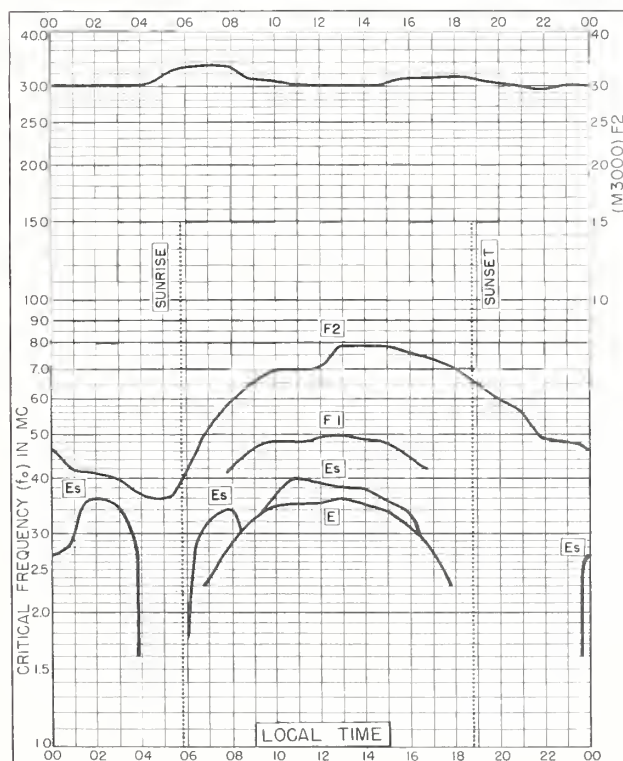


Fig. 58. MUNDARING, W. AUSTRALIA
32.0°S, 116.2°E FEBRUARY 1961

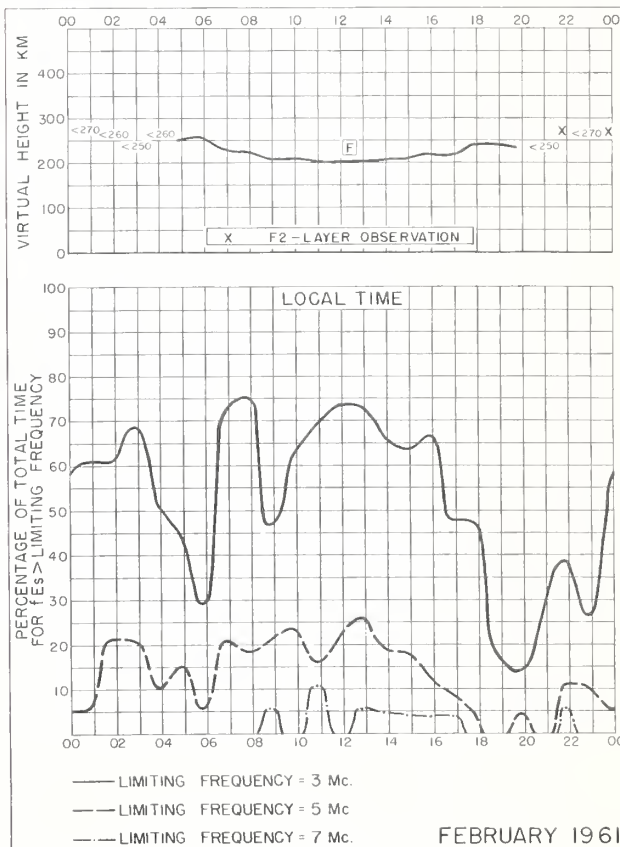


Fig. 59. MUNDARING, W. AUSTRALIA
FEBRUARY 1961

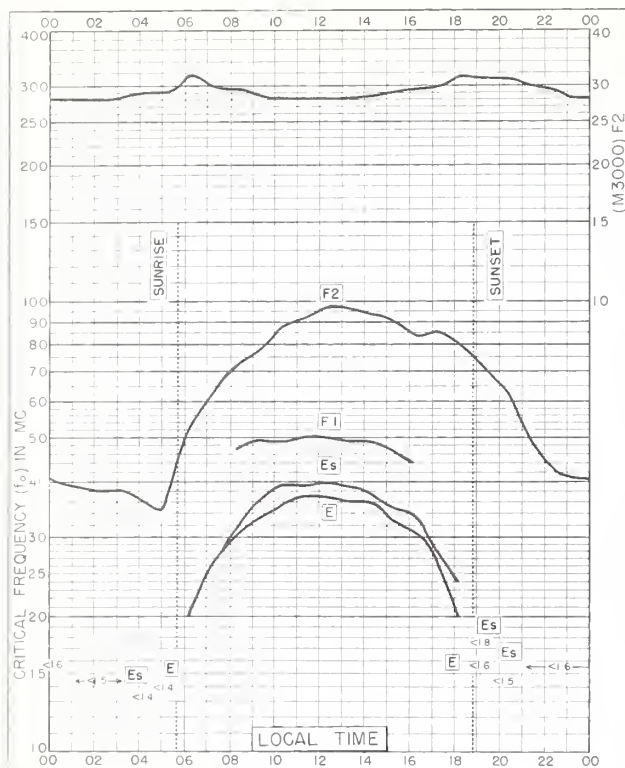


Fig. 60. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E
FEBRUARY 1961

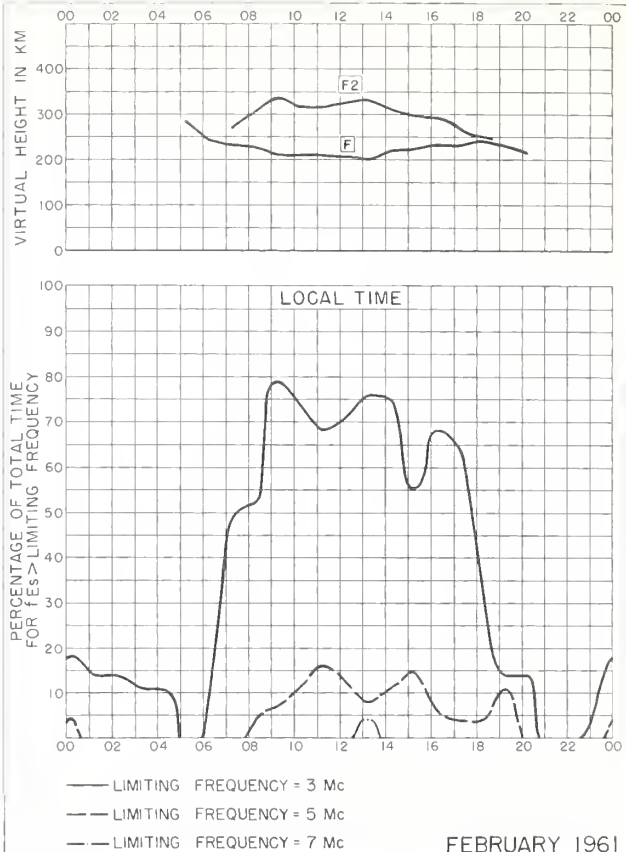


Fig. 61. CAPETOWN, UNION OF S. AFRICA

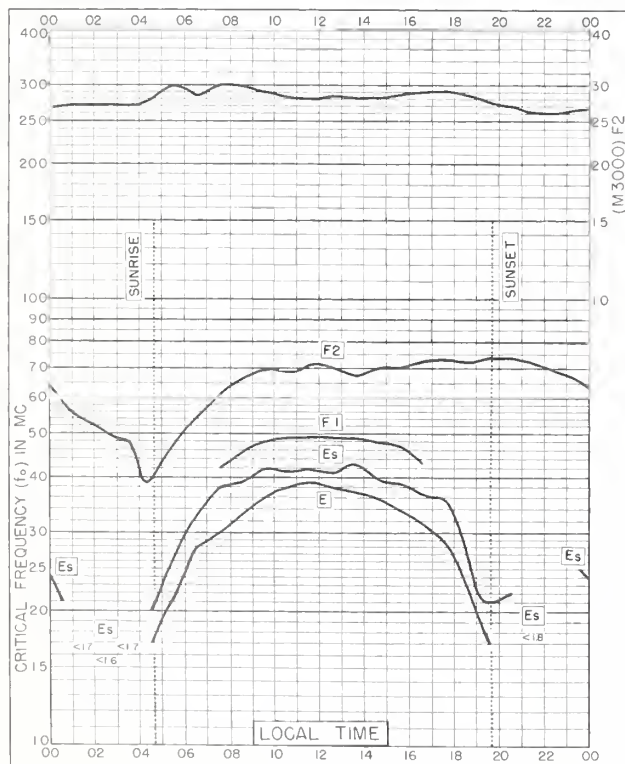


Fig. 62. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E
JANUARY 1961

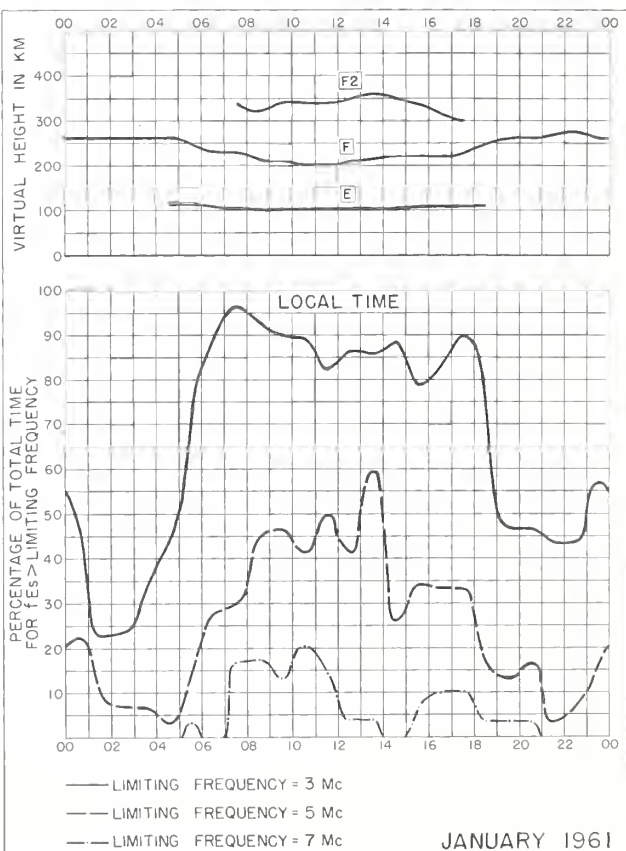


Fig. 63. CHRISTCHURCH, NEW ZEALAND

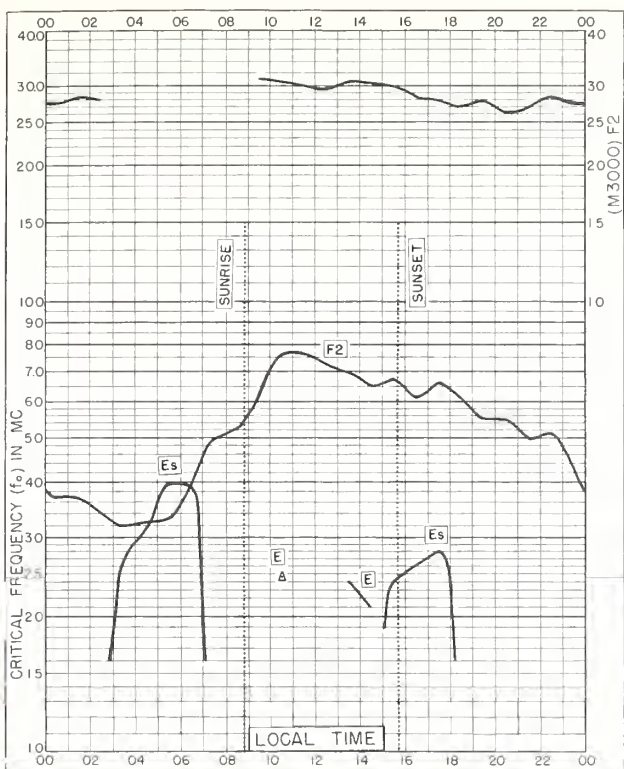


Fig. 64. GODHAVN, GREENLAND
69.3°N, 53.5°W FEBRUARY 1960

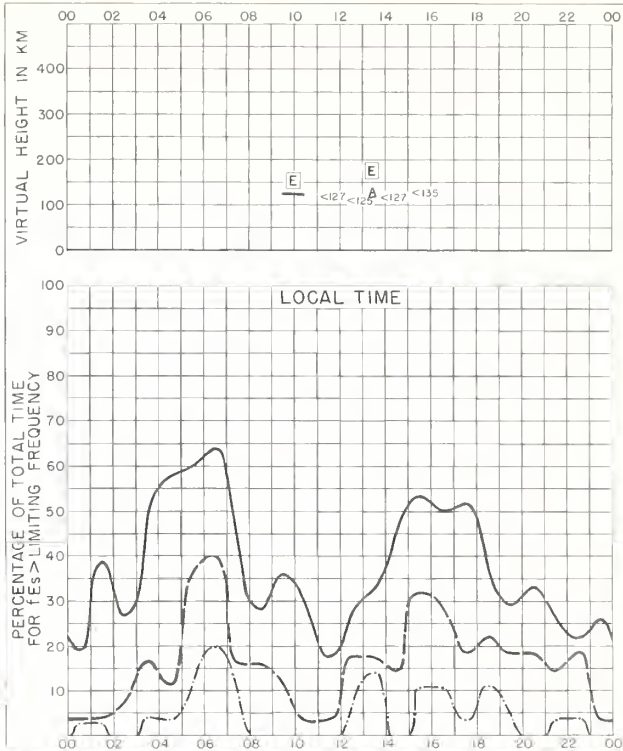


Fig. 65. GODHAVN, GREENLAND FEBRUARY 1960

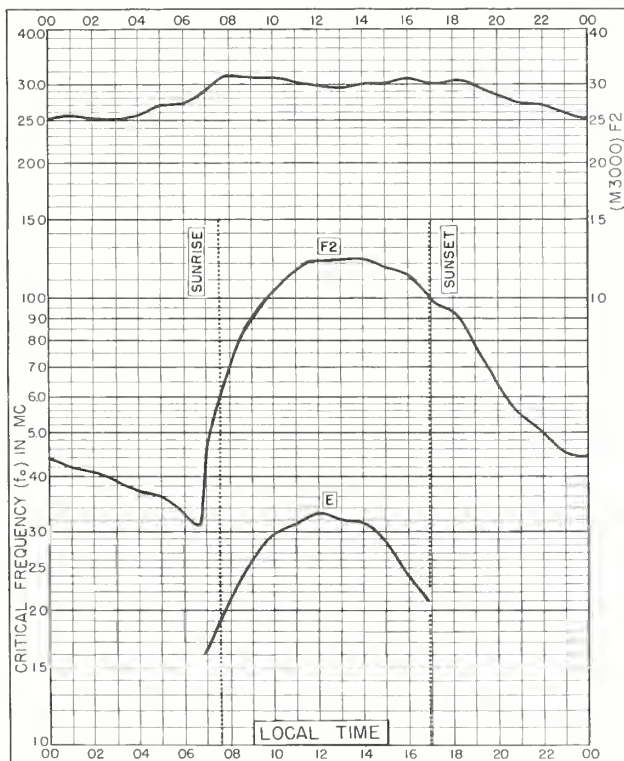


Fig. 66. JULIUSRUH/RÜGEN, GERMANY
54.6°N, 13.4°E FEBRUARY 1960

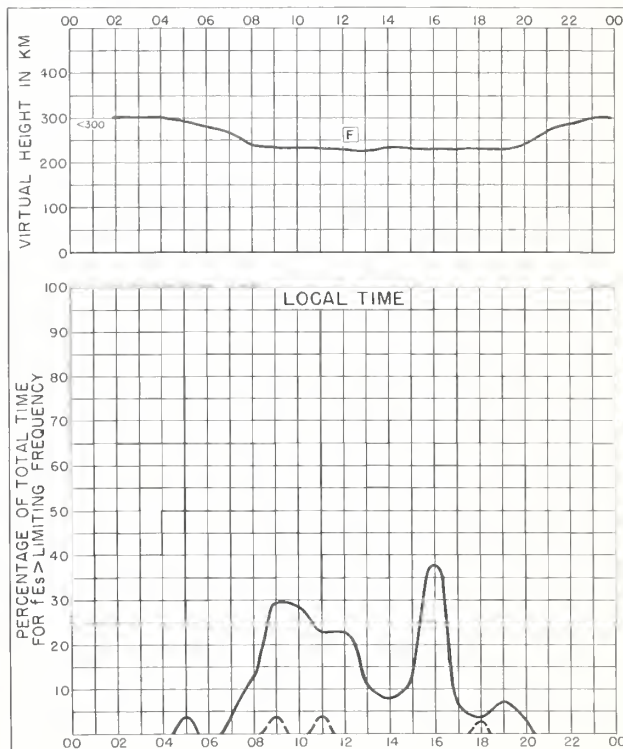


Fig. 67. JULIUSRUH/RÜGEN, GERMANY
FEBRUARY 1960

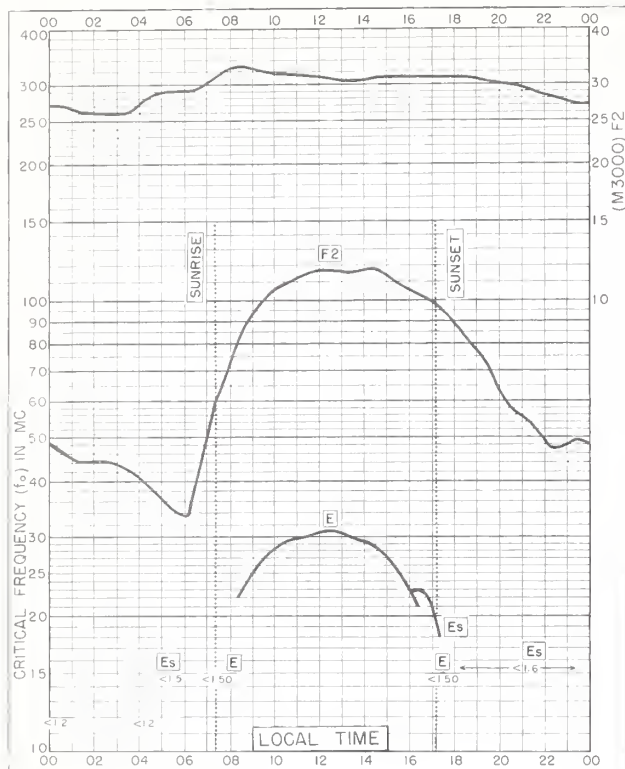


Fig. 68. DOORBES, BELGIUM
50.1°N, 4.6°E FEBRUARY 1960

N85 S03



Fig. 70. PRUHONICE, CZECHOSLOVAKIA
50.0°N, 14.6°E FEBRUARY 1960

NBS 503

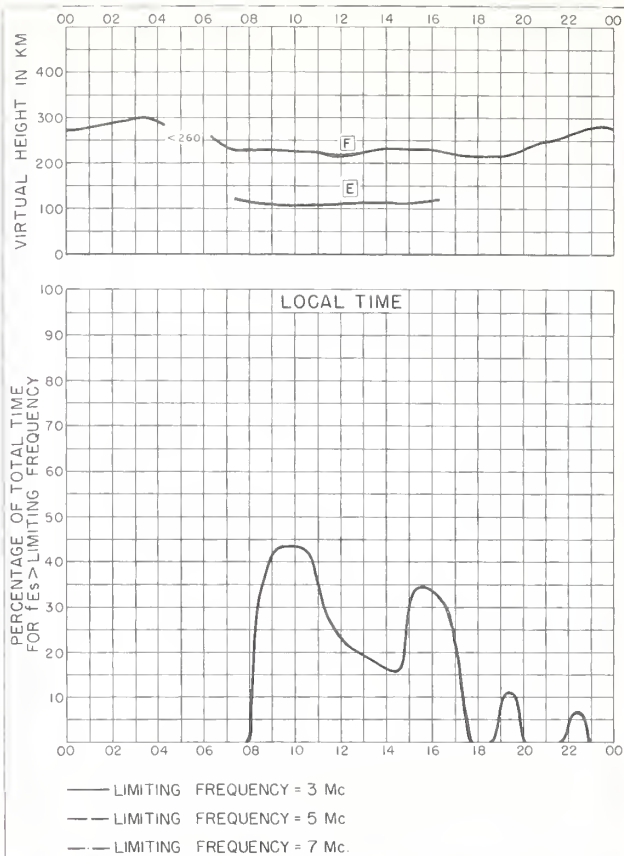


Fig. 69. DOORBES, BELGIUM FEBRUARY 1960

NBS 49C

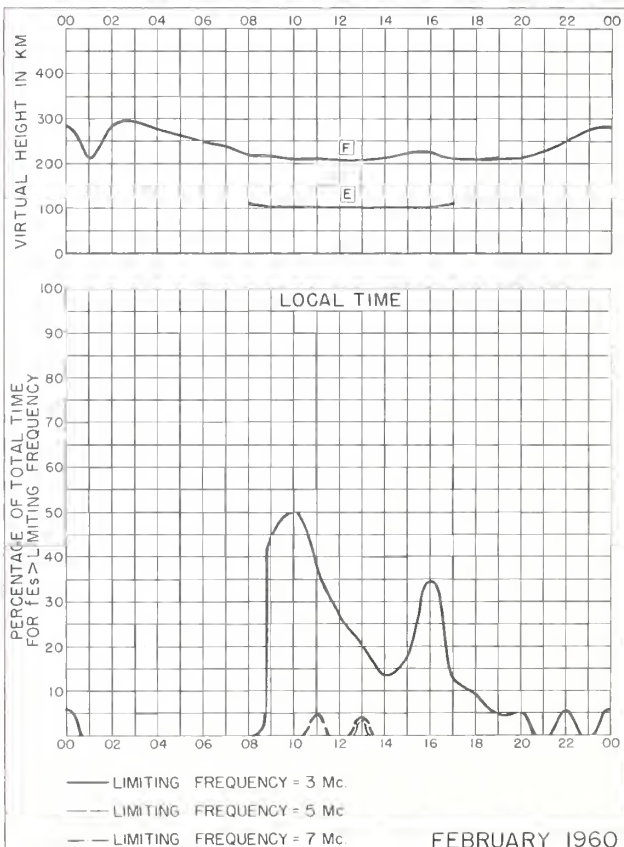


Fig. 71. PRUHONICE, CZECHOSLOVAKIA

NBS 49C

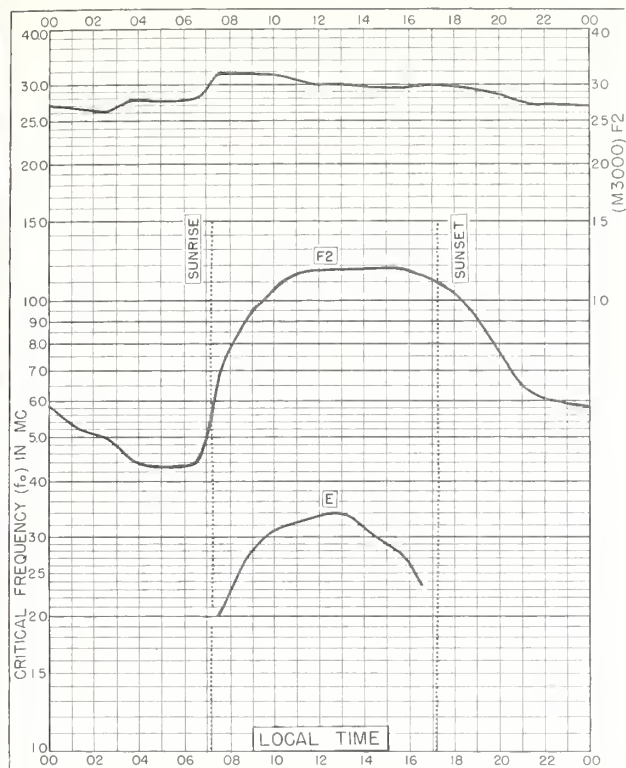


Fig. 72. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W FEBRUARY 1960

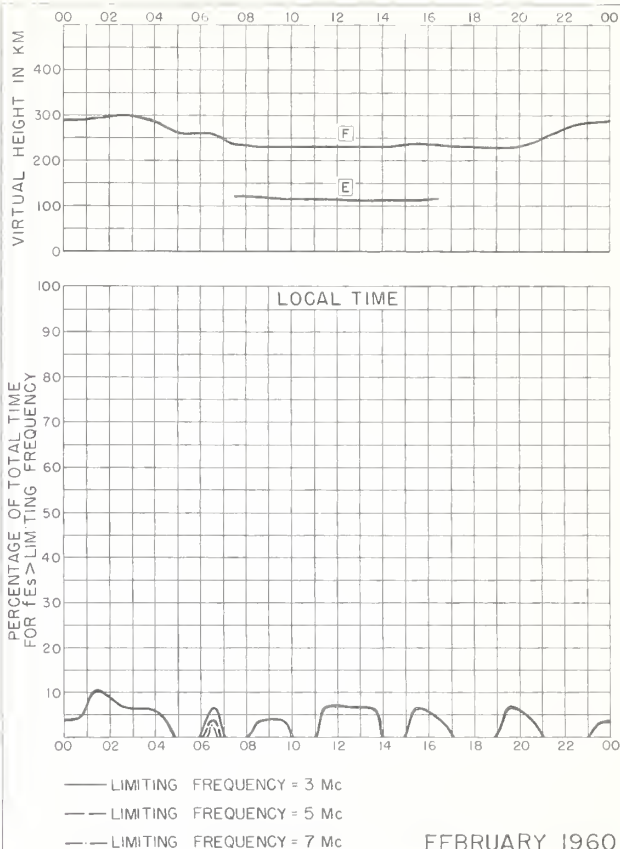


Fig. 73. ST. JOHN'S, NEWFOUNDLAND

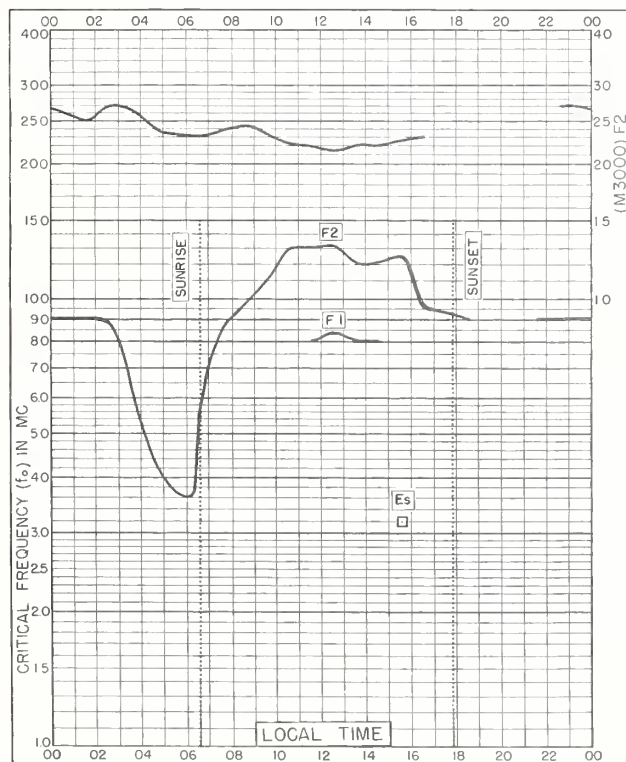


Fig. 74. MACAU
22.2°N, 113.6°E FEBRUARY 1960

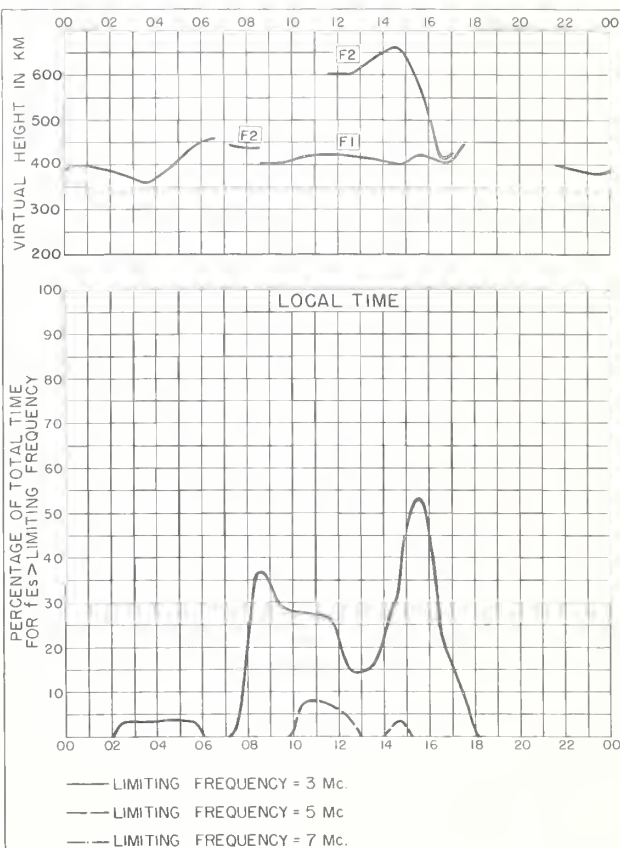


Fig. 75. MACAU FEBRUARY 1960

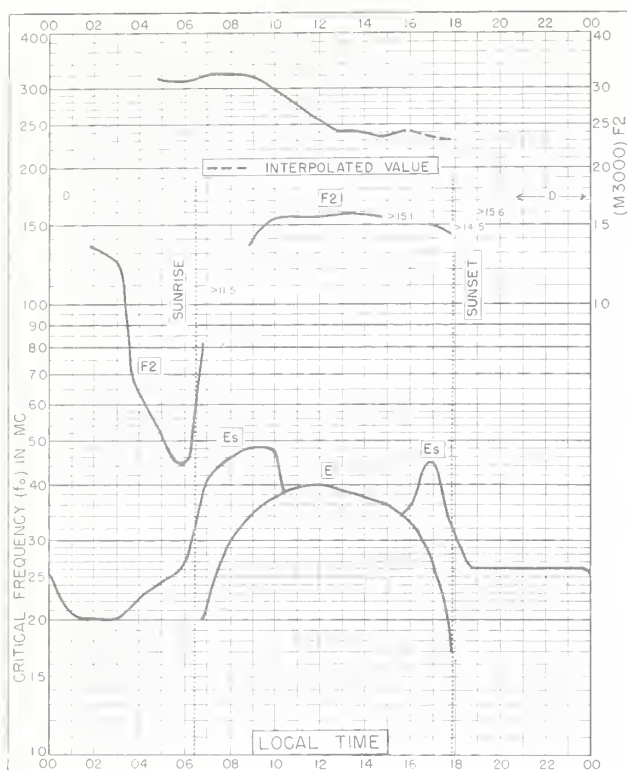


Fig. 76. DAKAR, FRENCH W. AFRICA
14.8°N, 17.4°W
FEBRUARY 1960

NBS 503

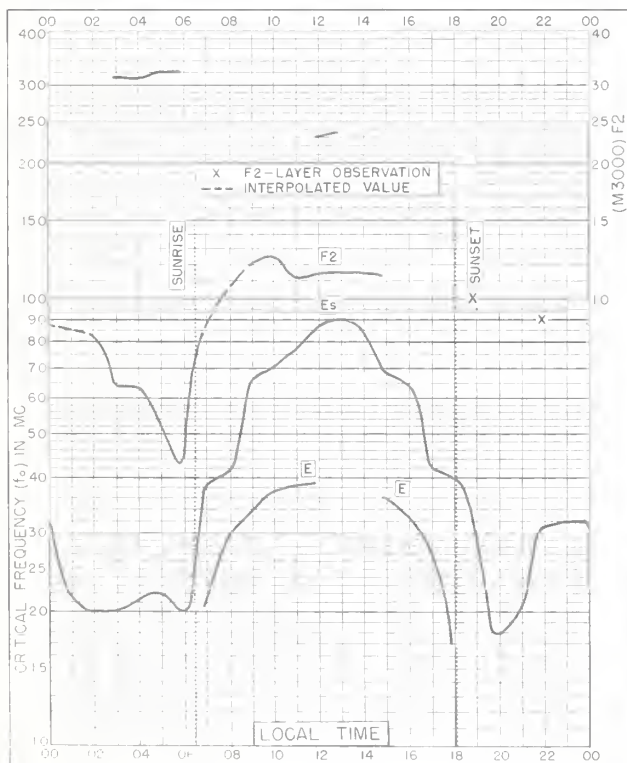


Fig. 78. DJIBOUTI, FRENCH SOMALILAND
11.6°N, 43.2°E
FEBRUARY 1960

NBS 503

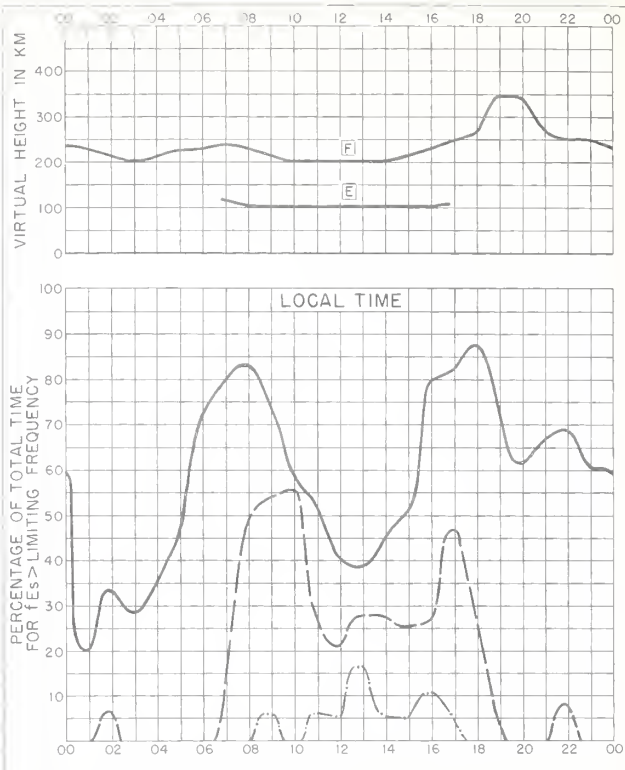


Fig. 77. DAKAR, FRENCH W. AFRICA
FEBRUARY 1960

NBS 490

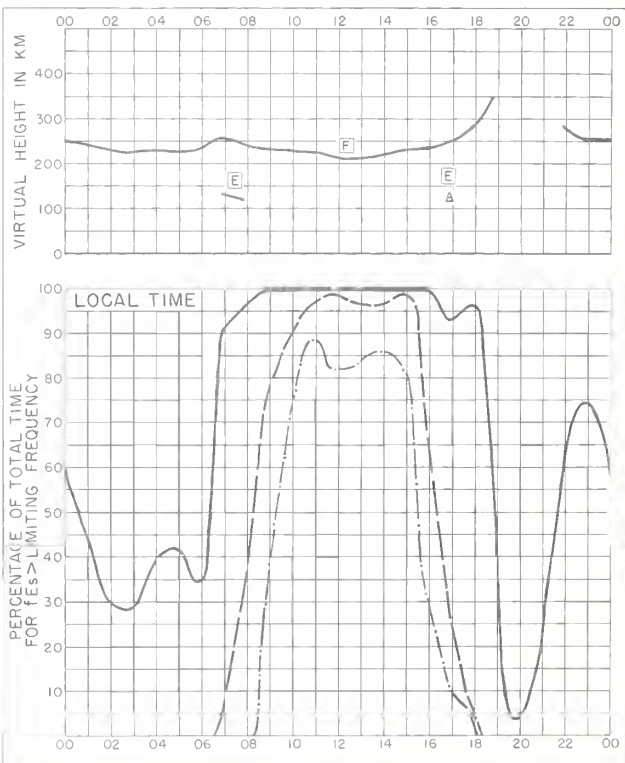


Fig. 79. DJIBOUTI, FRENCH SOMALILAND
FEBRUARY 1960

NBS 490

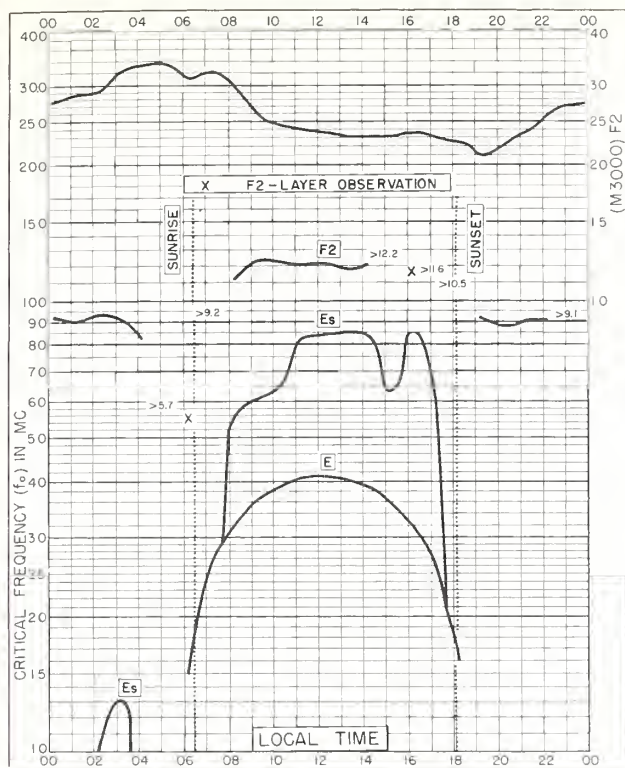


Fig. 80. IBADAN, NIGERIA
7.4°N, 3.9°E

FEBRUARY 1960

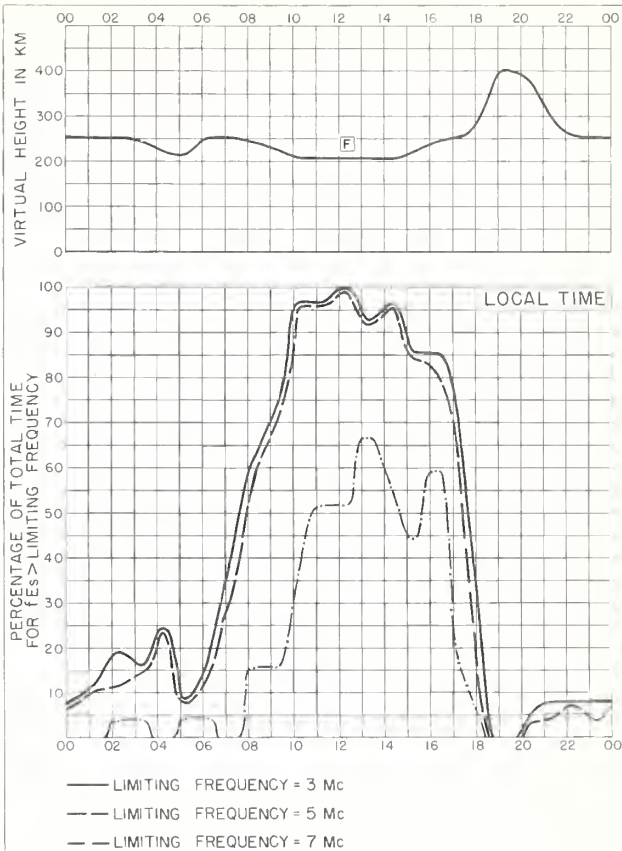


Fig. 81. IBADAN, NIGERIA

FEBRUARY 1960

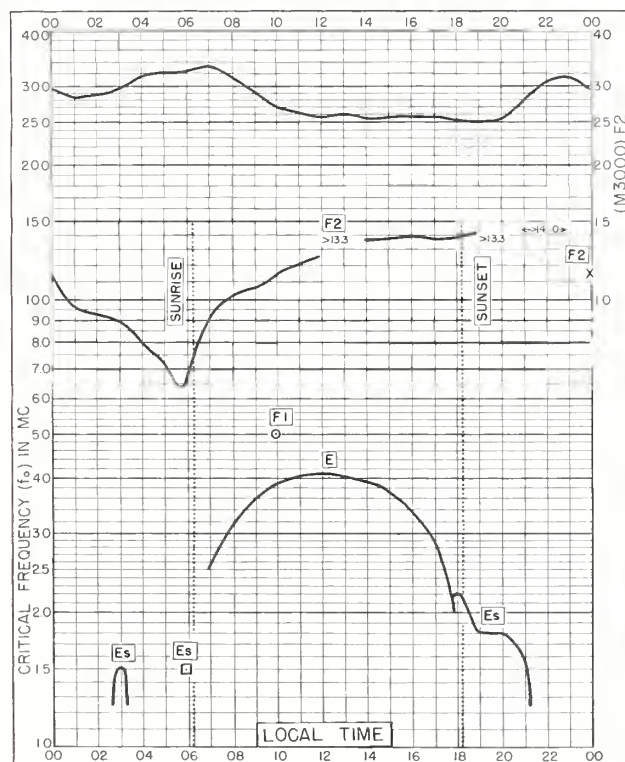


Fig. 82. LWIRO, BELGIAN CONGO
2.3°S, 28.8°E

FEBRUARY 1960

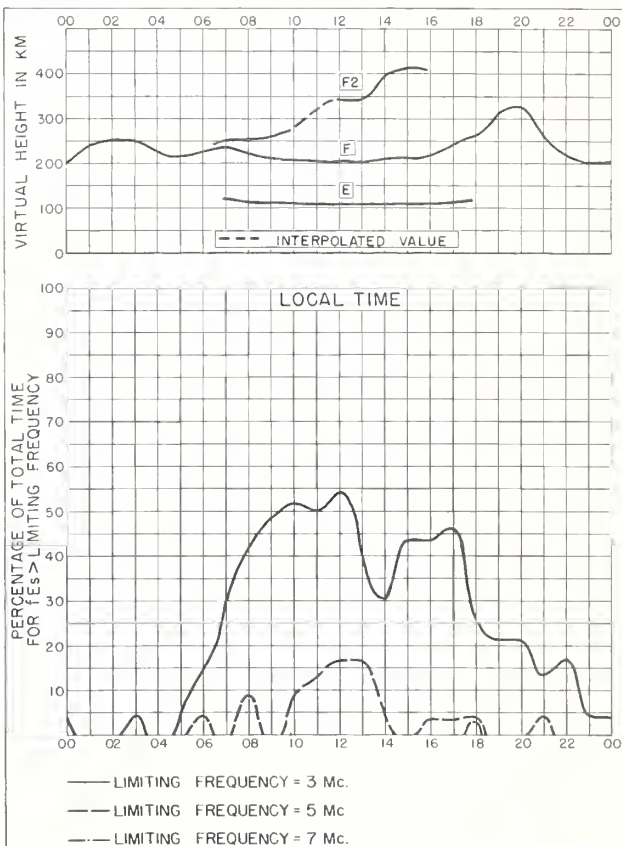


Fig. 83. LWIRO, BELGIAN CONGO

FEBRUARY 1960

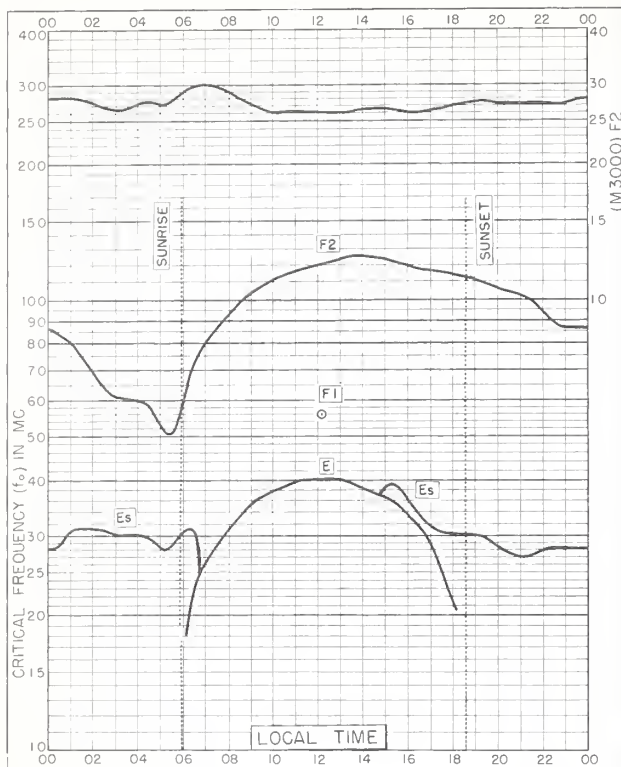


Fig. 84. TANANARIVE, MADAGASCAR
18.8°S, 47.5°E FEBRUARY 1960

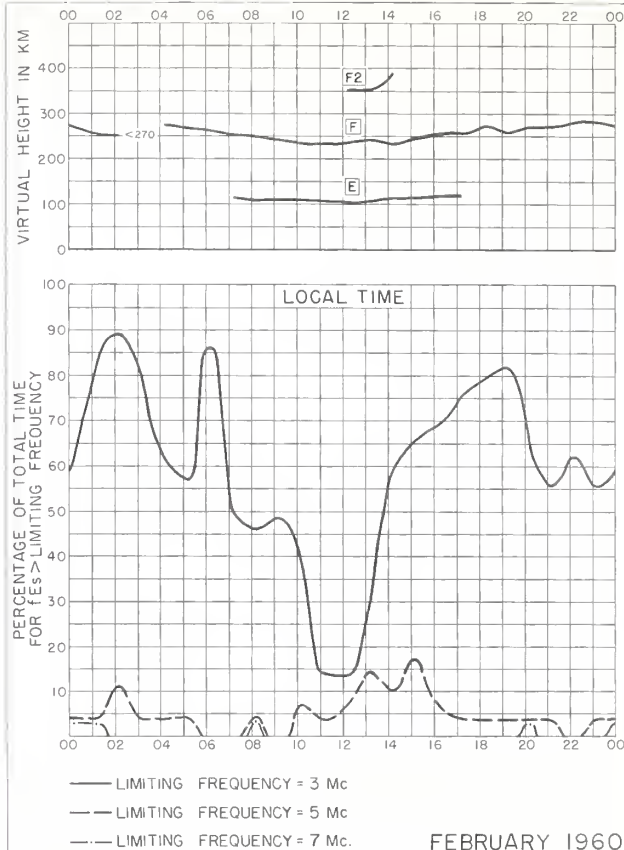


Fig. 85. TANANARIVE, MADAGASCAR

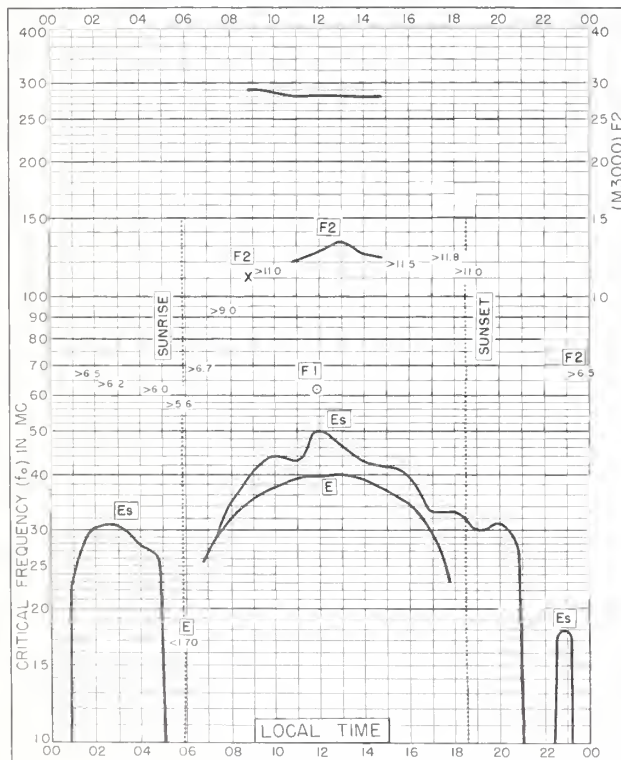


Fig. 86. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E FEBRUARY 1960

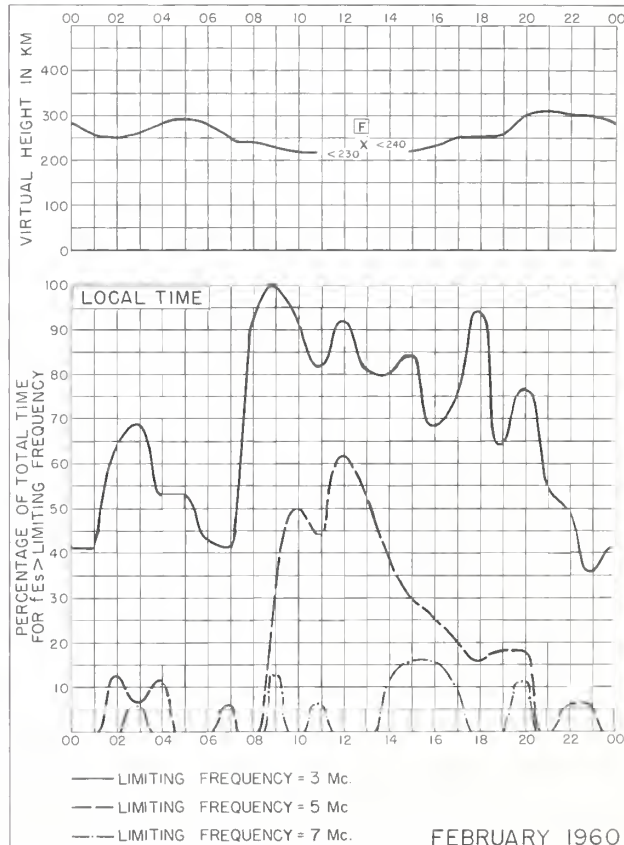


Fig. 87. TOWNSVILLE, AUSTRALIA

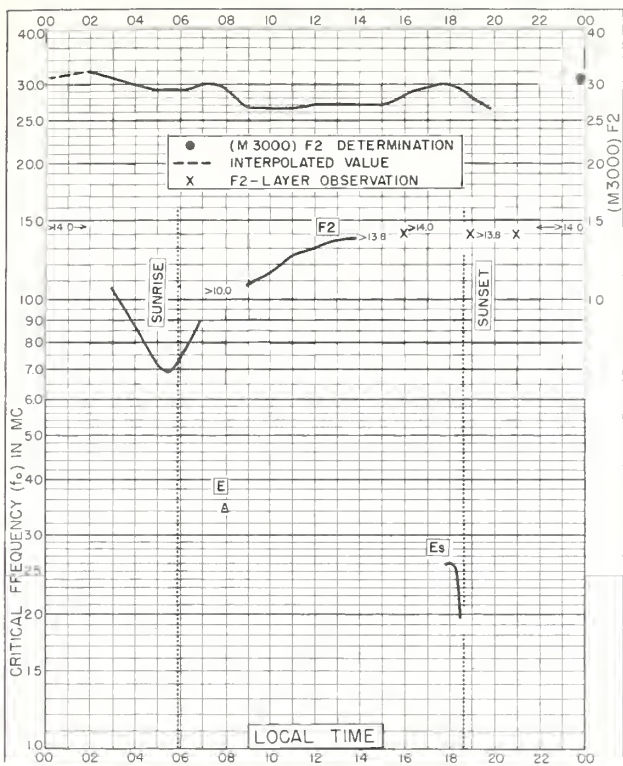


Fig. 88. SAO PAULO, BRAZIL
 23.5°S, 46.5°W FEBRUARY 1960

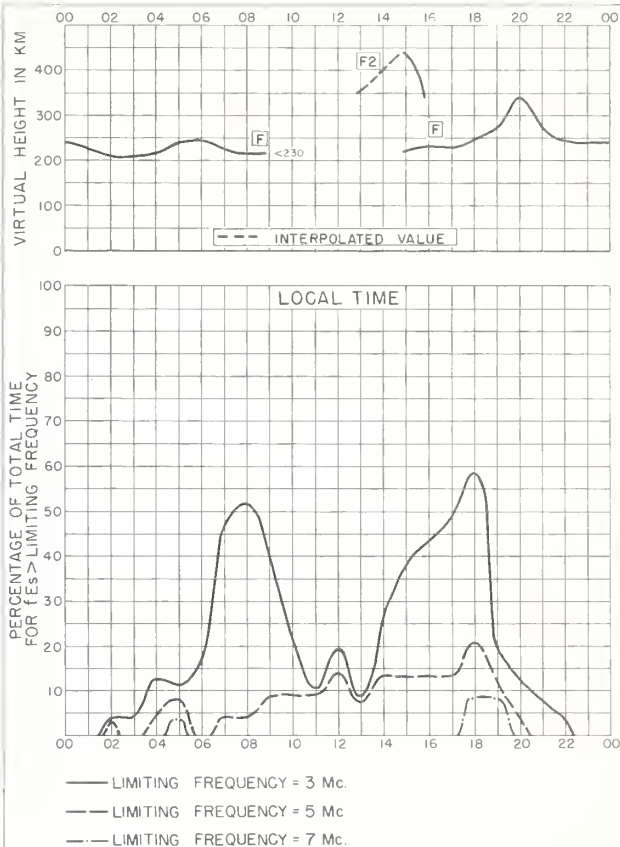


Fig. 89. SAO PAULO, BRAZIL FEBRUARY 1960

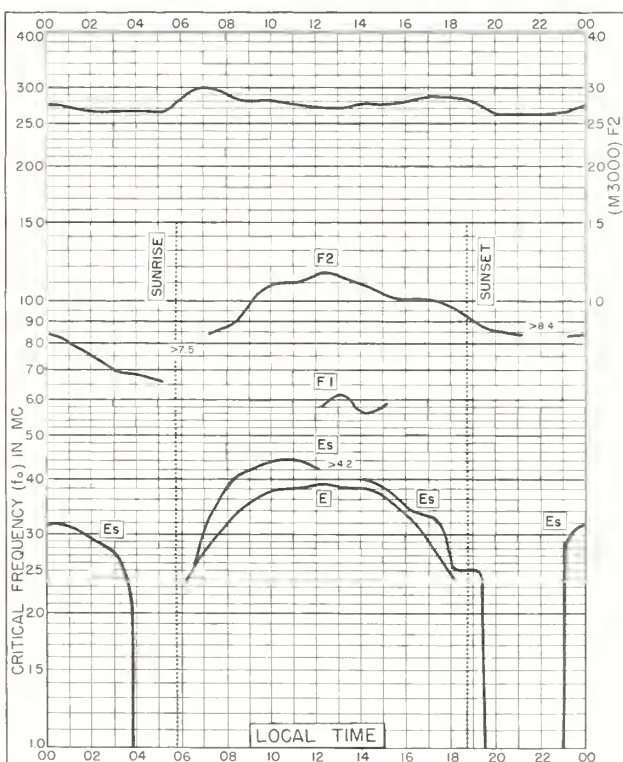


Fig. 90. BRISBANE, AUSTRALIA
 27.5°S, 152.9°E FEBRUARY 1960

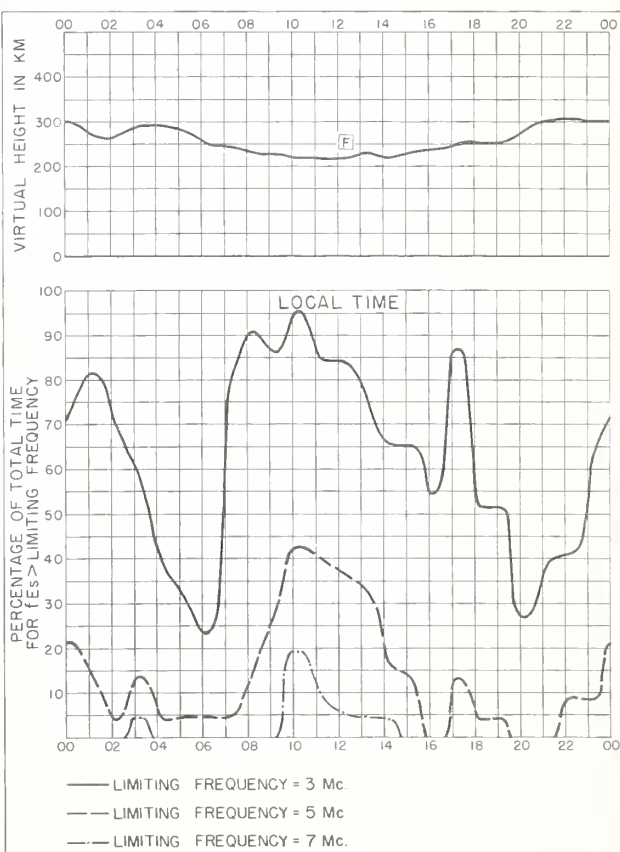
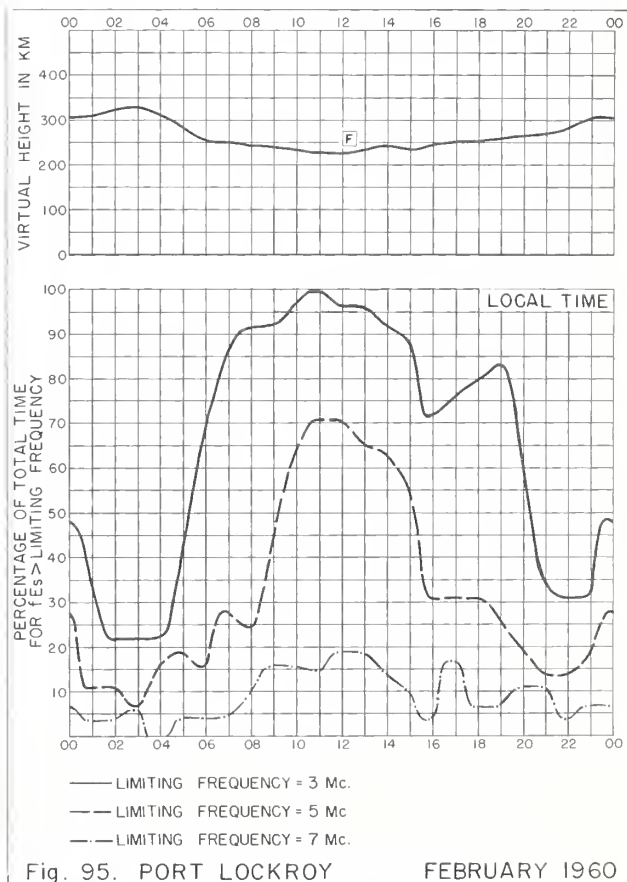
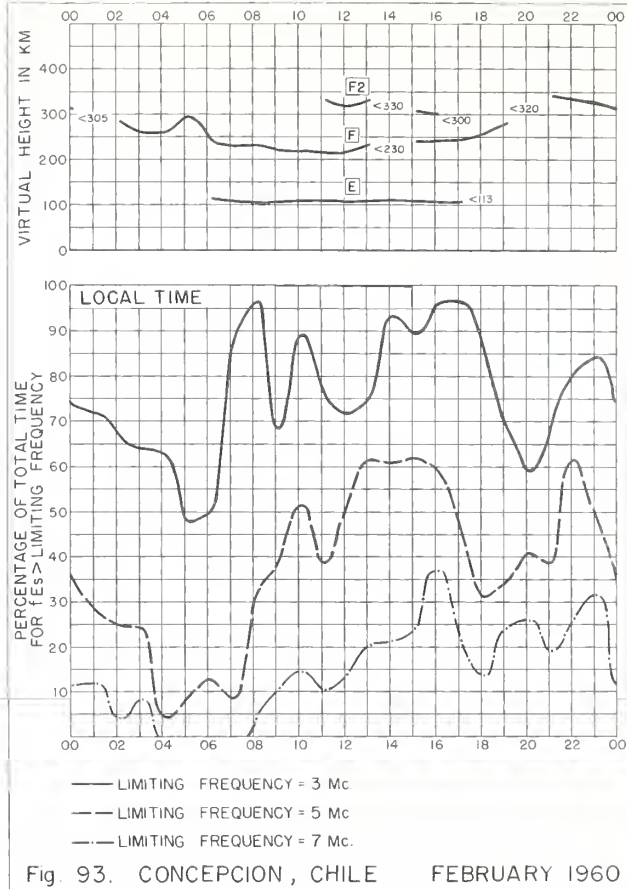
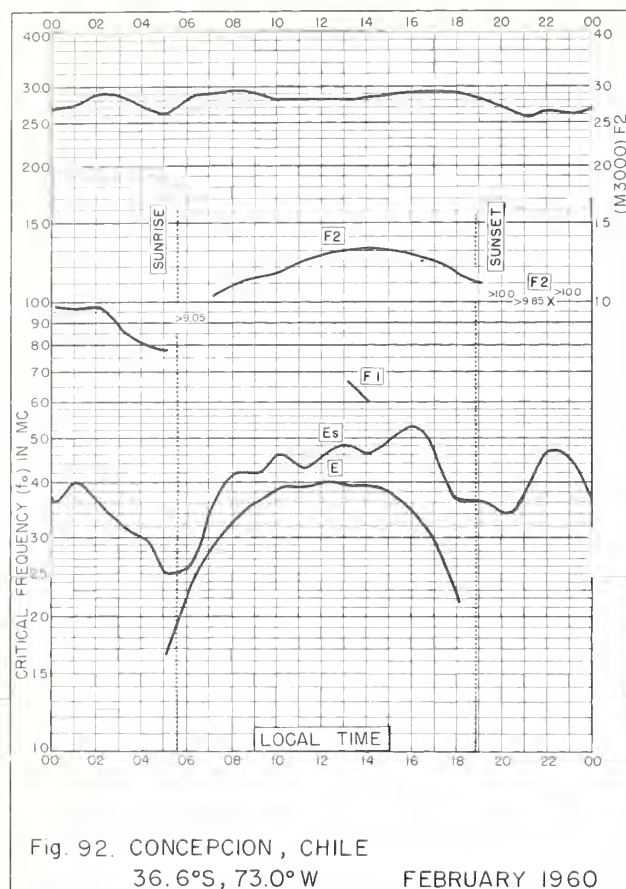


Fig. 91. BRISBANE, AUSTRALIA FEBRUARY 1960



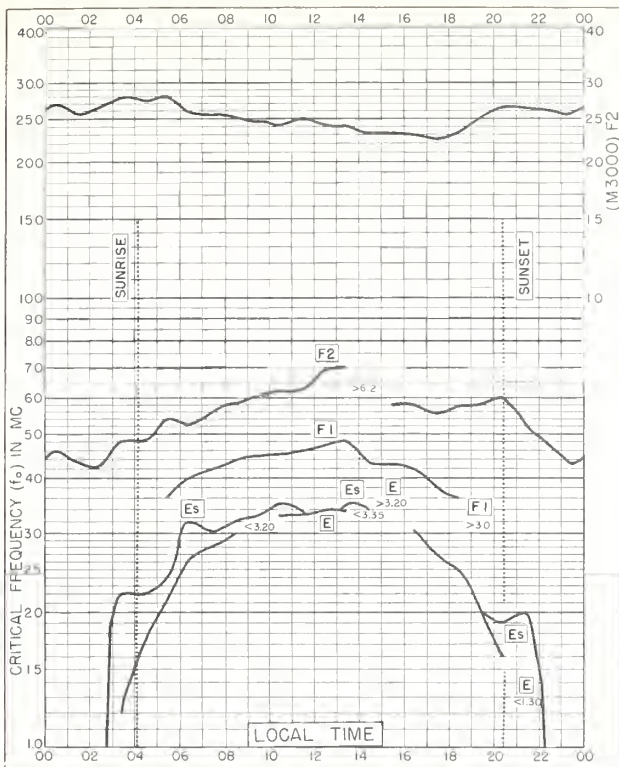


Fig. 96. WILKES STATION
66.3°S, 110.5°E FEBRUARY 1960

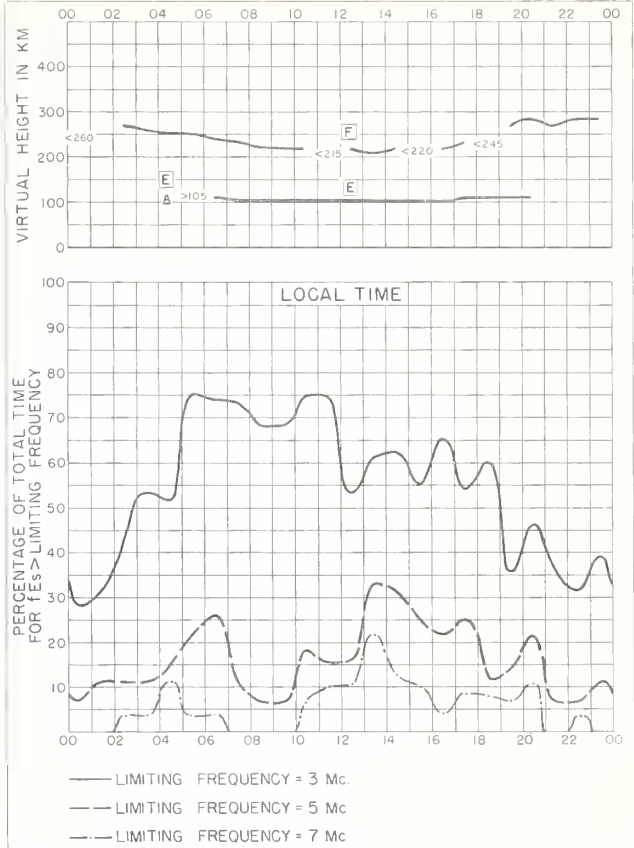


Fig. 97. WILKES STATION FEBRUARY 1960

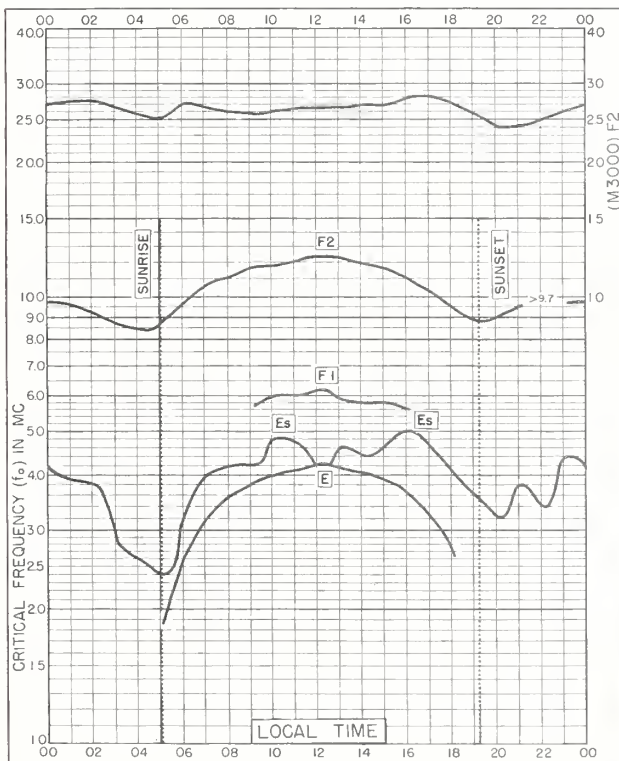


Fig. 98. CONCEPCION, CHILE
36.6°S, 73.0°W JANUARY 1960

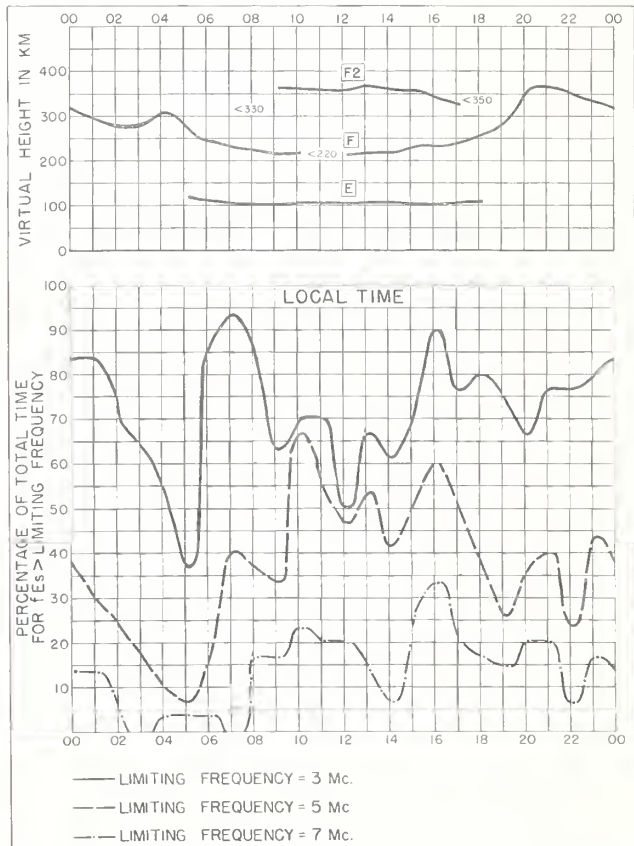


Fig. 99. CONCEPCION, CHILE JANUARY 1960

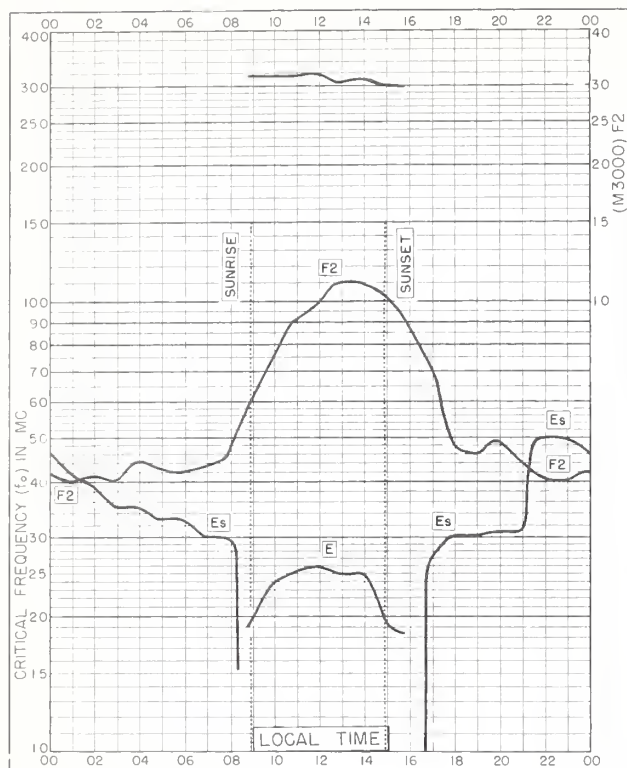


Fig. 100. CHURCHILL, CANADA
58.8°N, 94.2°W

DECEMBER 1959

NBS 503

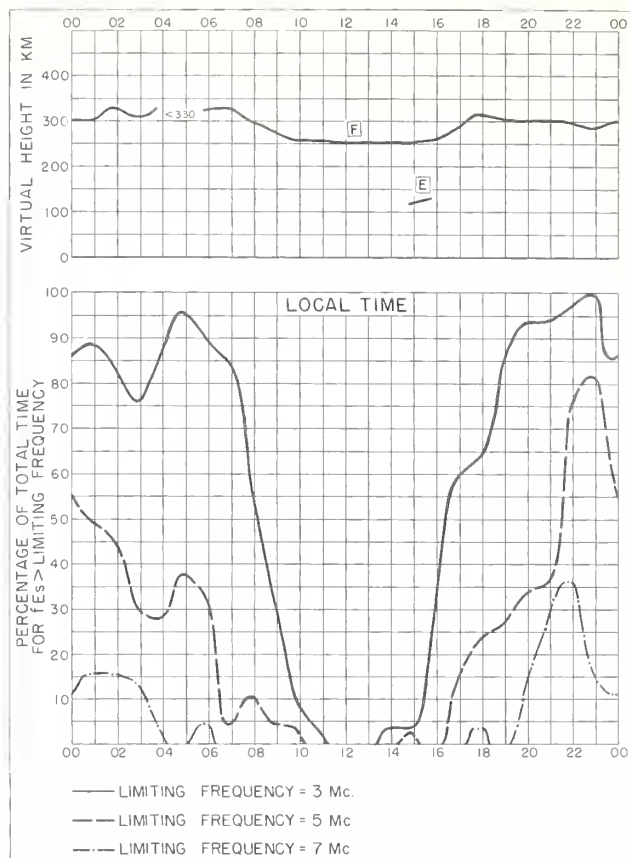


Fig. 101. CHURCHILL, CANADA DECEMBER 1959

NBS 490

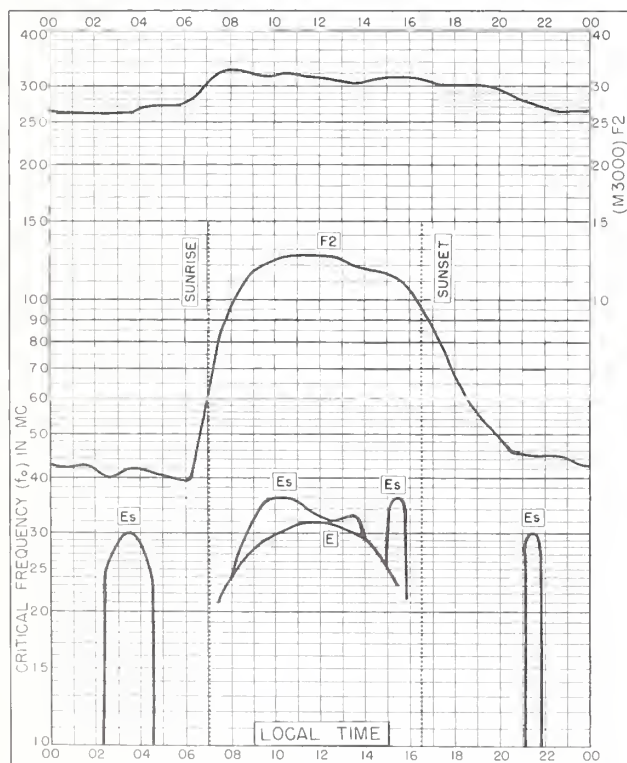


Fig. 102. WAKKANAI, JAPAN
45.4°N, 141.7°E

NOVEMBER 1959

NBS 503

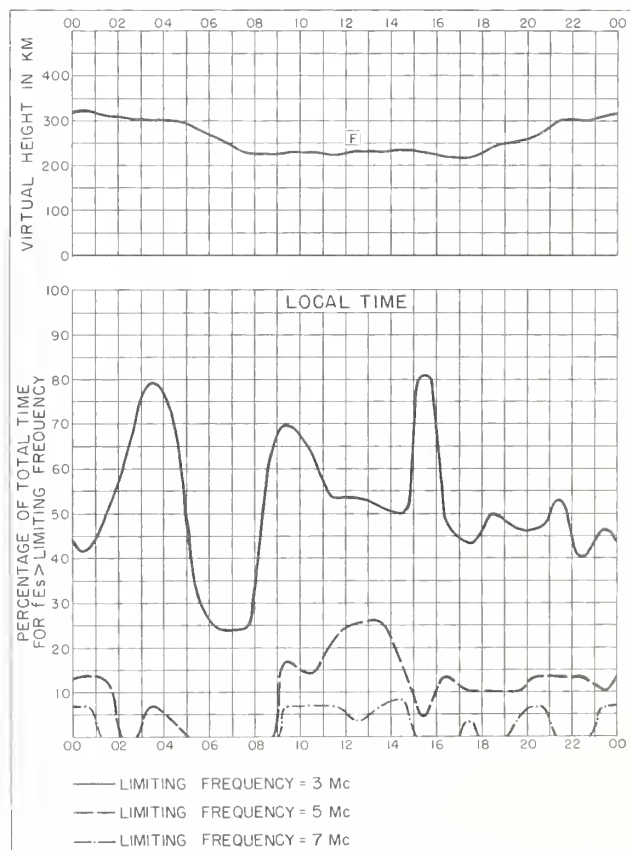


Fig. 103. WAKKANAI, JAPAN

NOVEMBER 1959

NBS 490

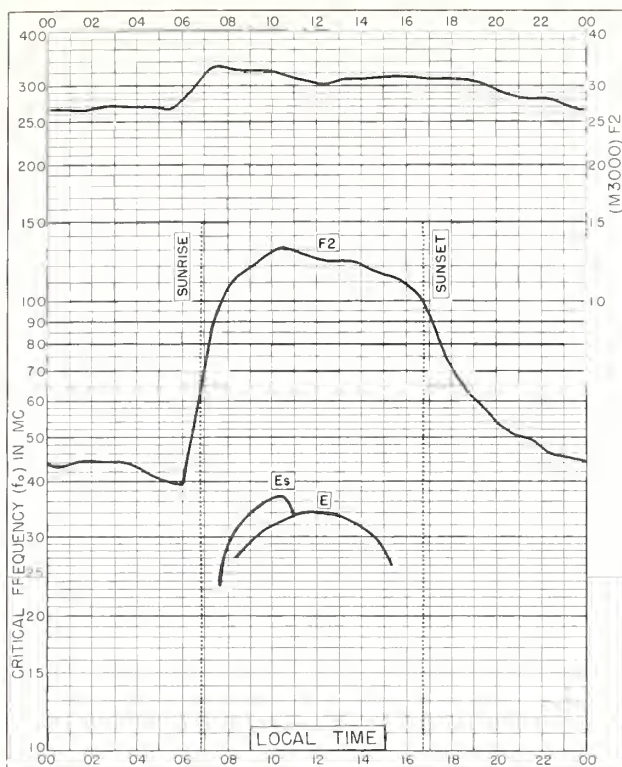


Fig. 104. AKITA, JAPAN

39.7°N, 140.1°E

NOVEMBER 1959

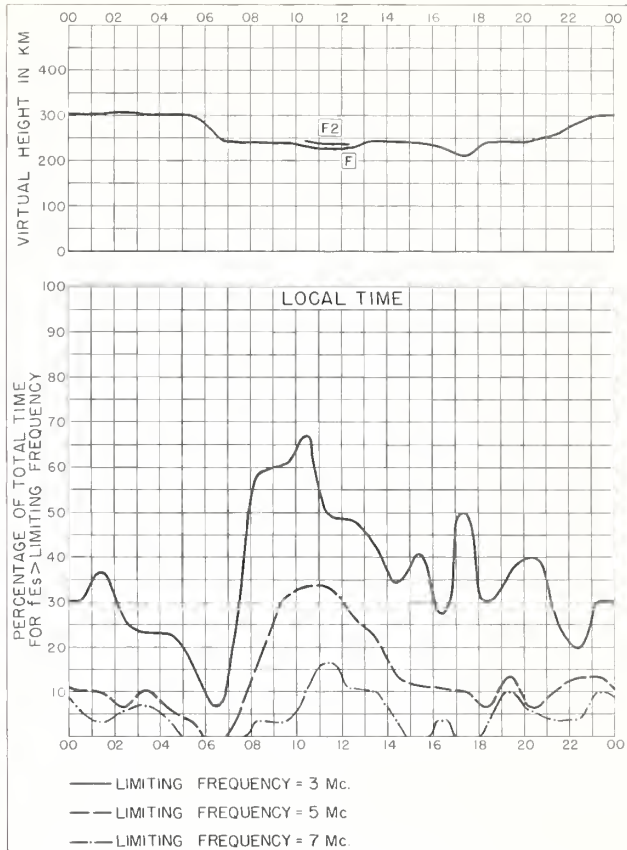


Fig. 105. AKITA, JAPAN

NOVEMBER 1959

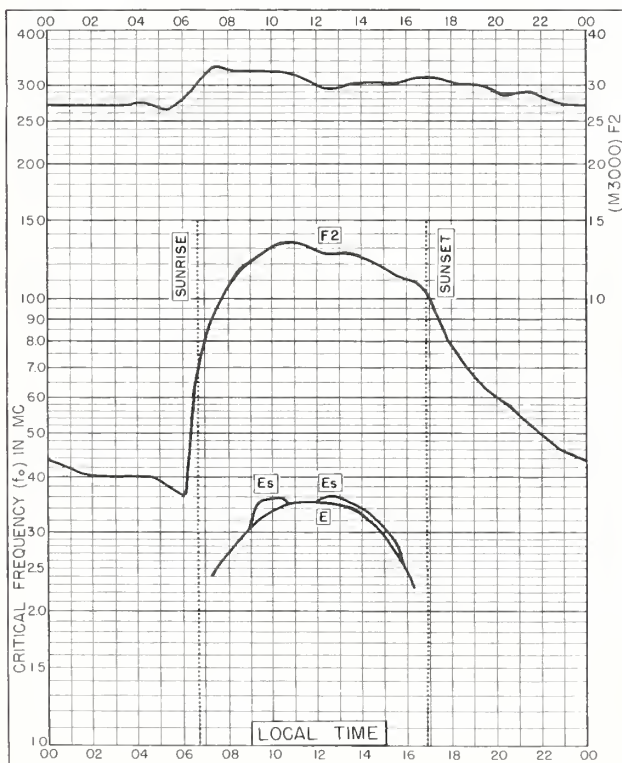


Fig. 106. TOKYO, JAPAN

35.7°N, 139.5°E

NOVEMBER 1959

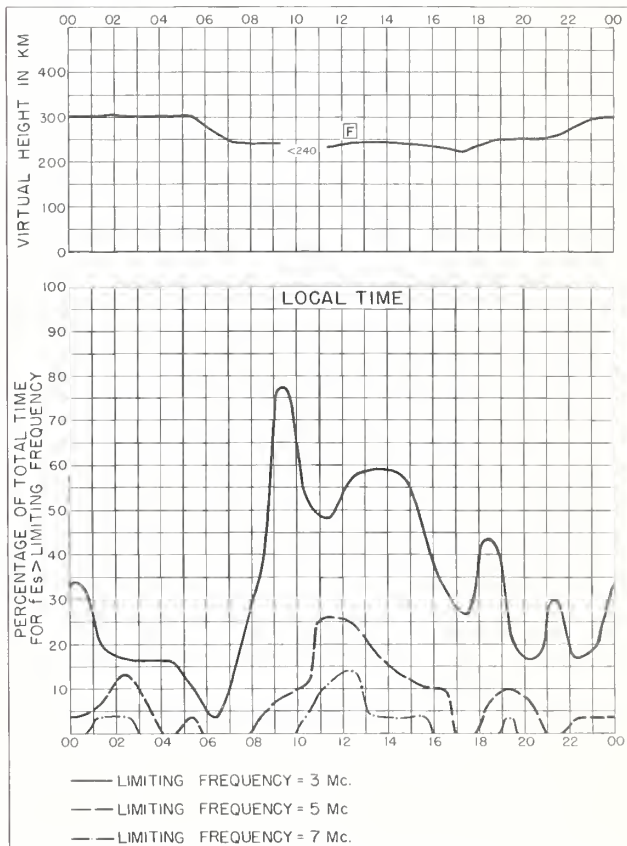


Fig. 107. TOKYO, JAPAN

NOVEMBER 1959

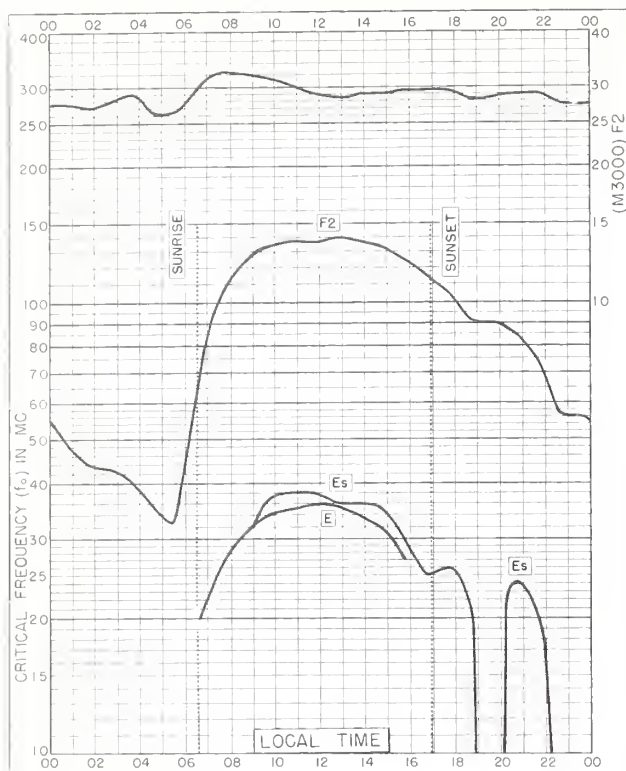


Fig. 108. YAMAGAWA, JAPAN
31.2°N, 130.6°E

NOVEMBER 1959

NBS 503

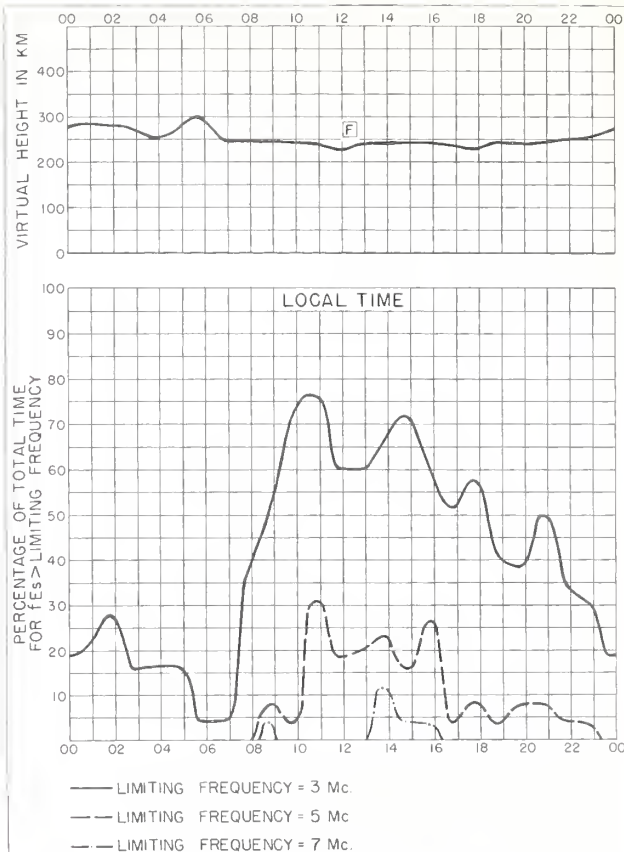


Fig. 109. YAMAGAWA, JAPAN

NOVEMBER 1959

NBS 490

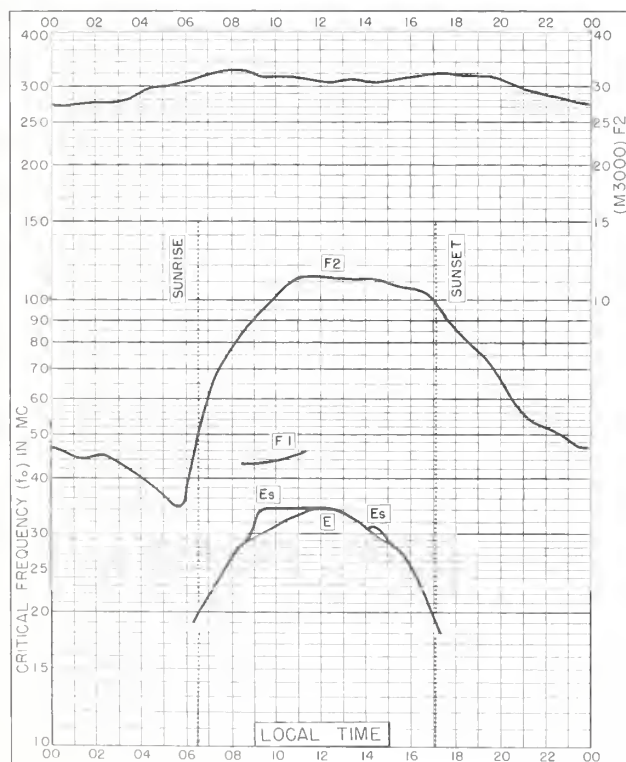


Fig. 110. De BILT, HOLLAND
52.1°N, 5.2°E

OCTOBER 1959

NBS 503

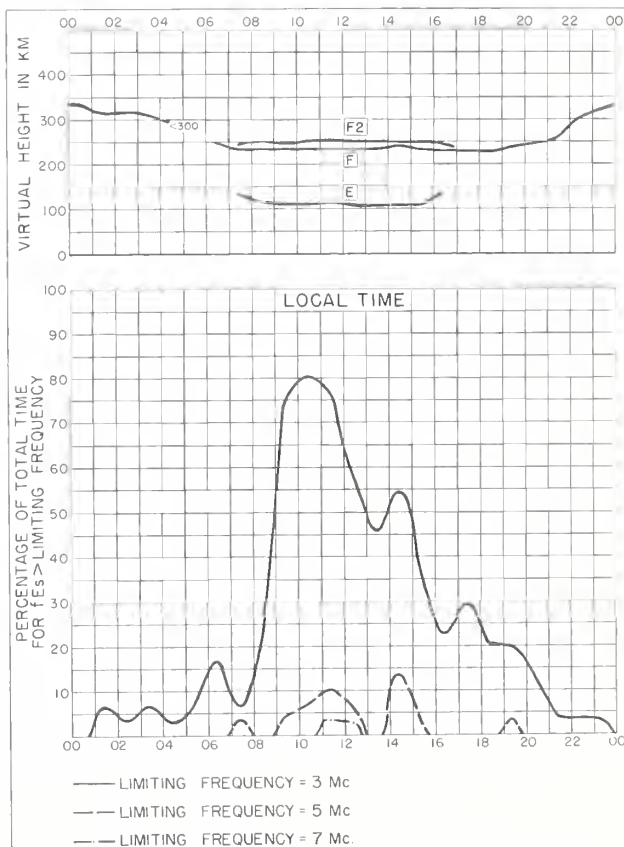


Fig. 111. De BILT, HOLLAND

OCTOBER 1959

NBS 490

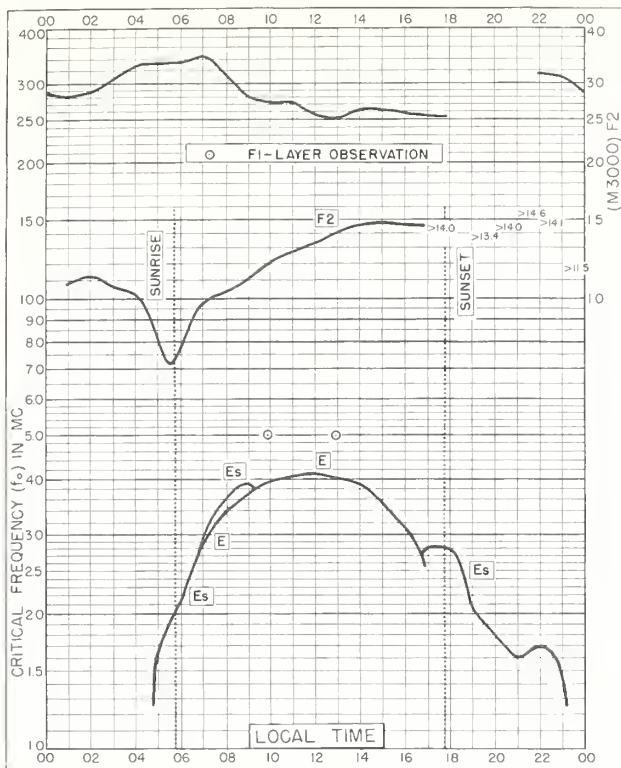
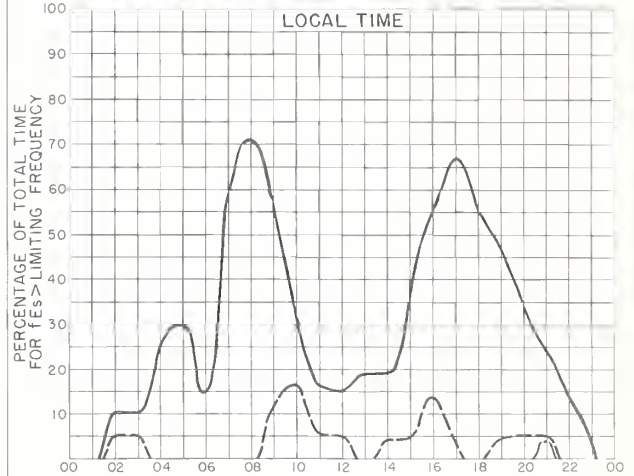
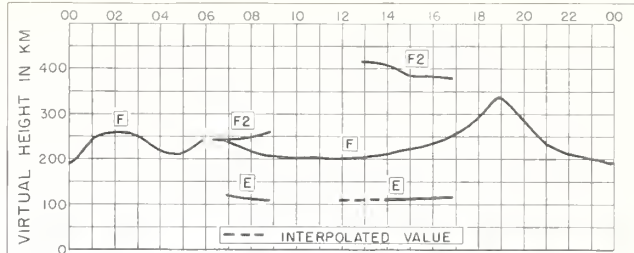


Fig. 112. LWIRO, BELGIAN CONGO

2.3°S, 28.8°E

OCTOBER 1959



— LIMITING FREQUENCY = 3 Mc
 --- LIMITING FREQUENCY = 5 Mc
 -.- LIMITING FREQUENCY = 7 Mc

Fig. 113. LWIRO, BELGIAN CONGO

OCTOBER 1959

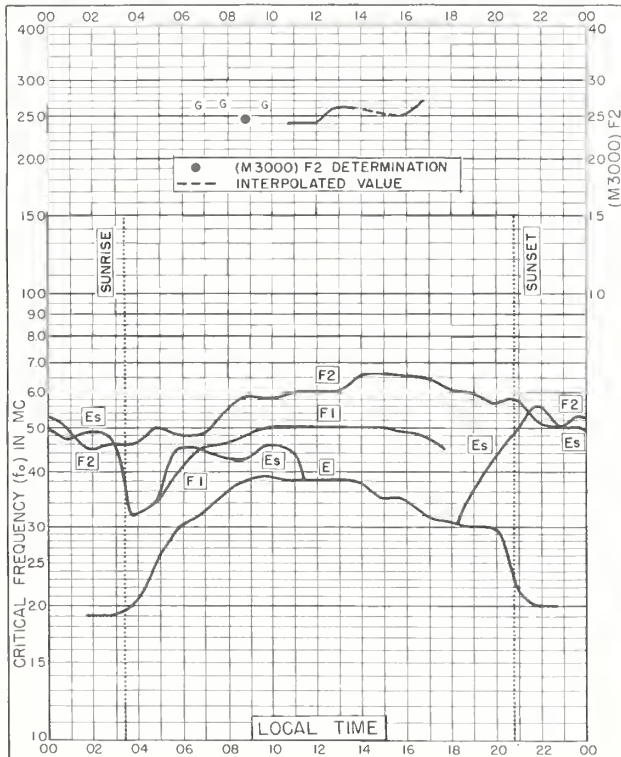
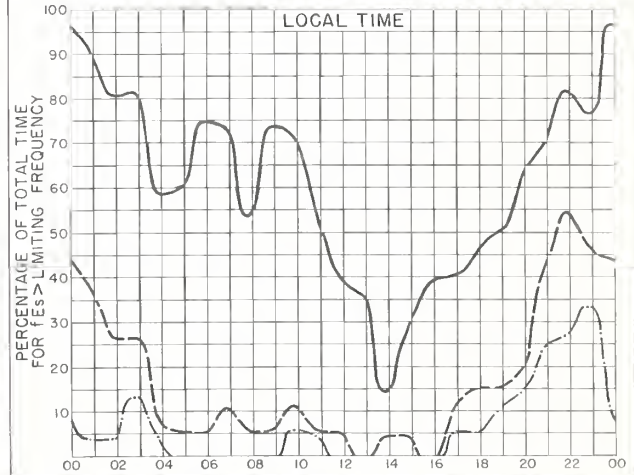
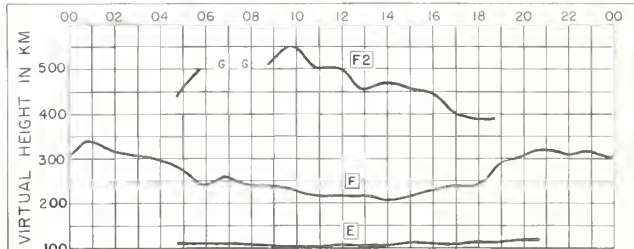


Fig. 114. CHURCHILL, CANADA

58.8°N, 94.2°W

JULY 1959



— LIMITING FREQUENCY = 3 Mc
 --- LIMITING FREQUENCY = 5 Mc
 -.- LIMITING FREQUENCY = 7 Mc

Fig. 115. CHURCHILL, CANADA

JULY 1959

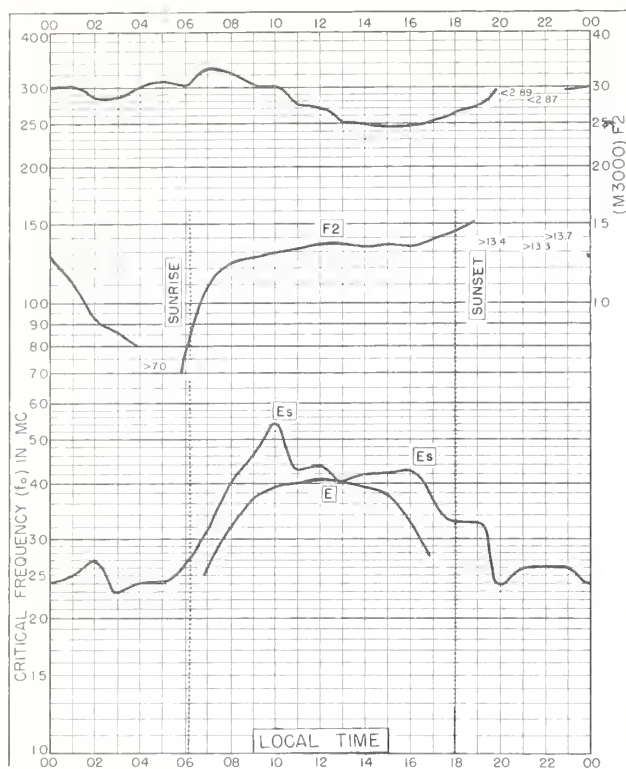


Fig. II6. LWIRO, BELGIAN CONGO
2.3°S, 28.8°E

JULY 1959

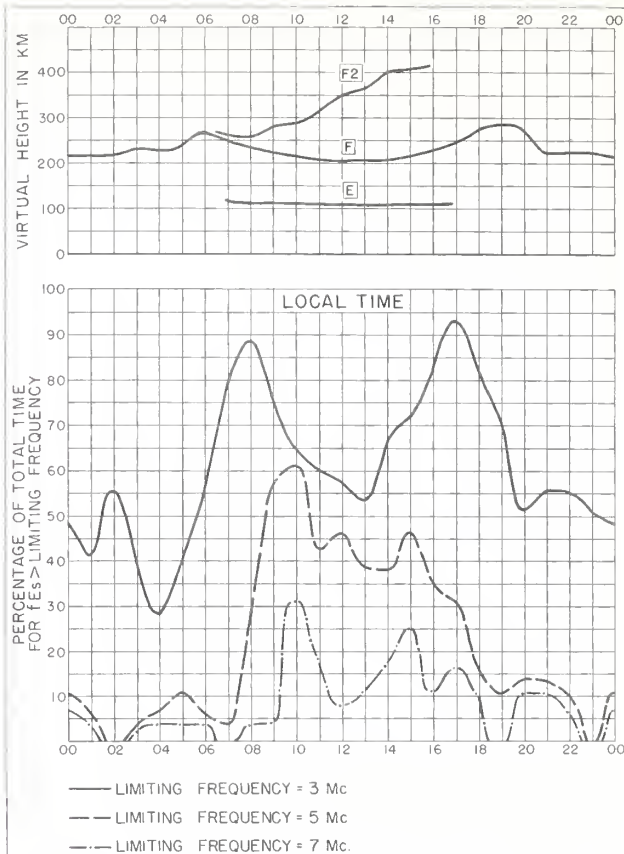


Fig. II7. LWIRO, BELGIAN CONGO

JULY 1959

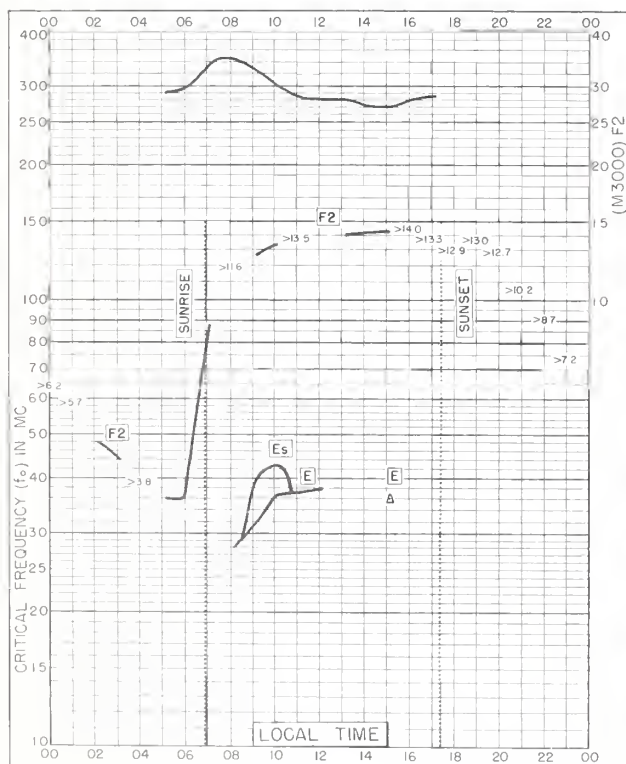


Fig. II8. DELHI, INDIA
28.6°N, 77.2°E

JANUARY 1959

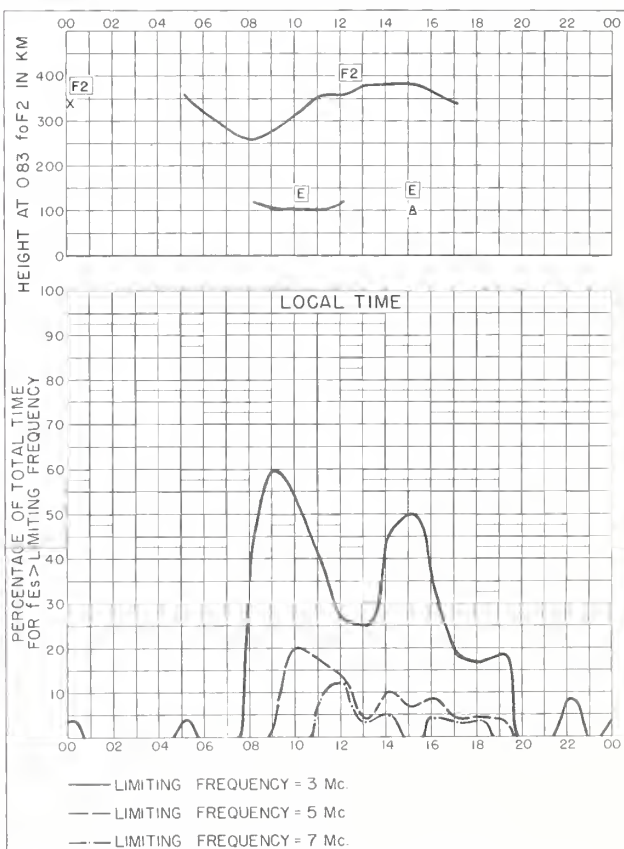


Fig. II9. DELHI, INDIA

JANUARY 1959

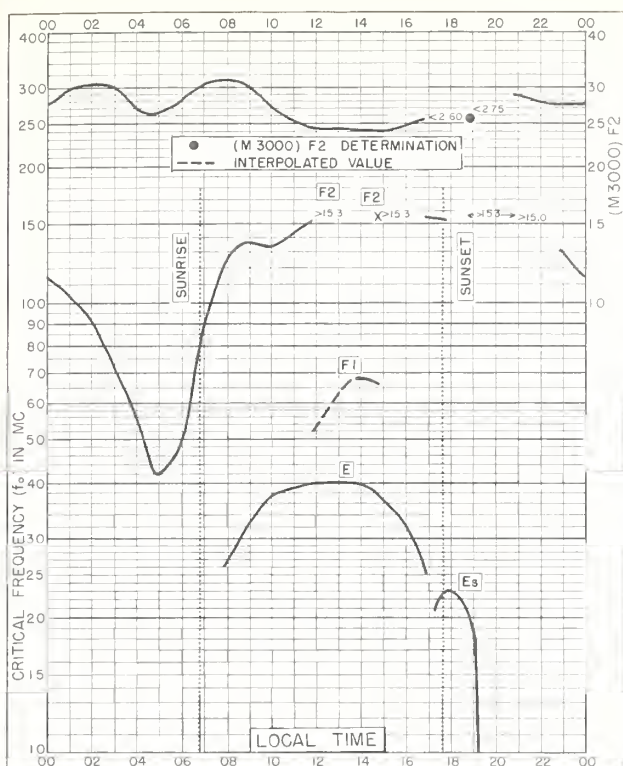


Fig. 120. AHMEDABAD, INDIA

23.0°N, 72.6°E

JANUARY 1959

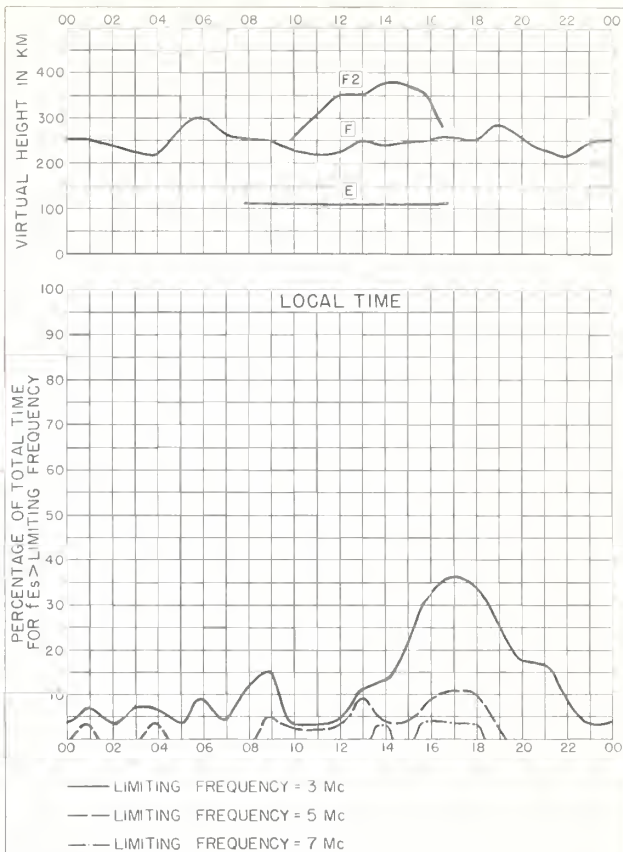


Fig. 121. AHMEDABAD, INDIA

JANUARY 1959

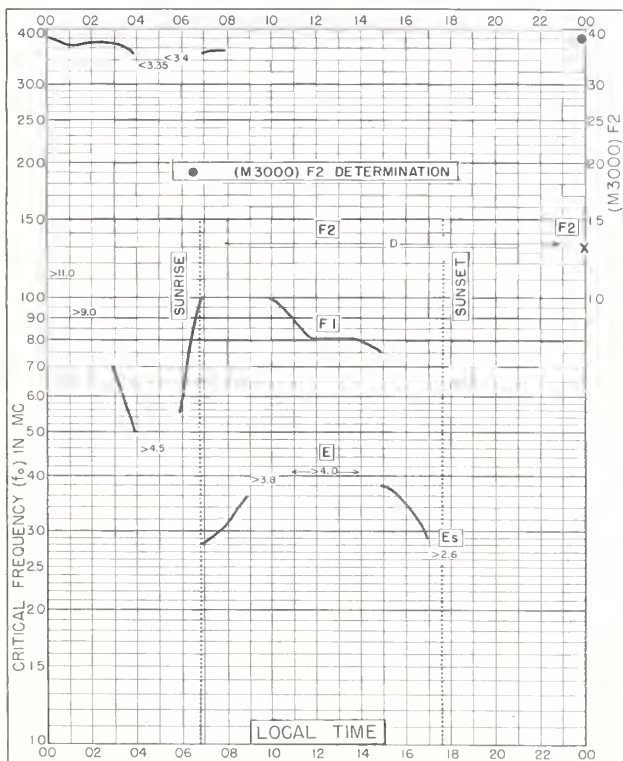


Fig. 122. CALCUTTA, INDIA

23.0°N, 88.6°E

JANUARY 1959

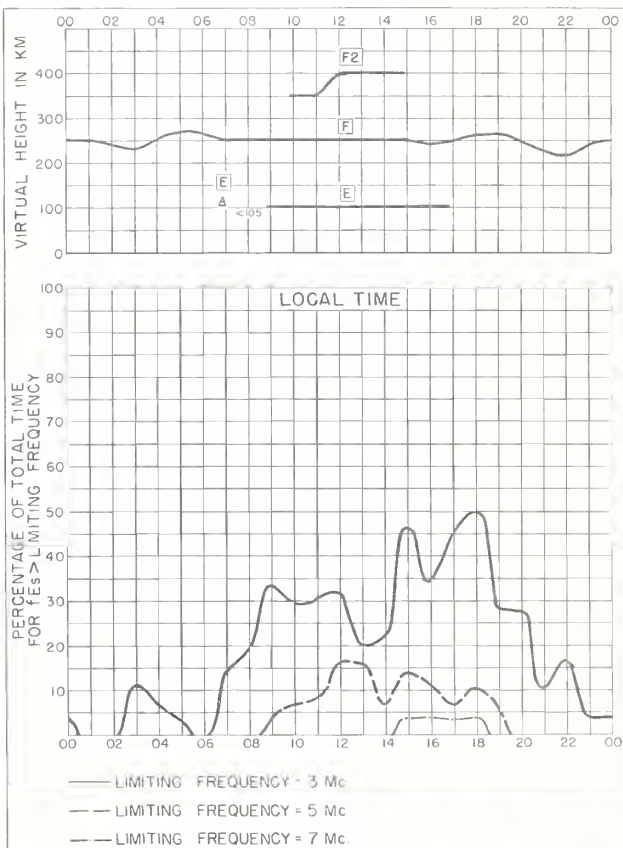
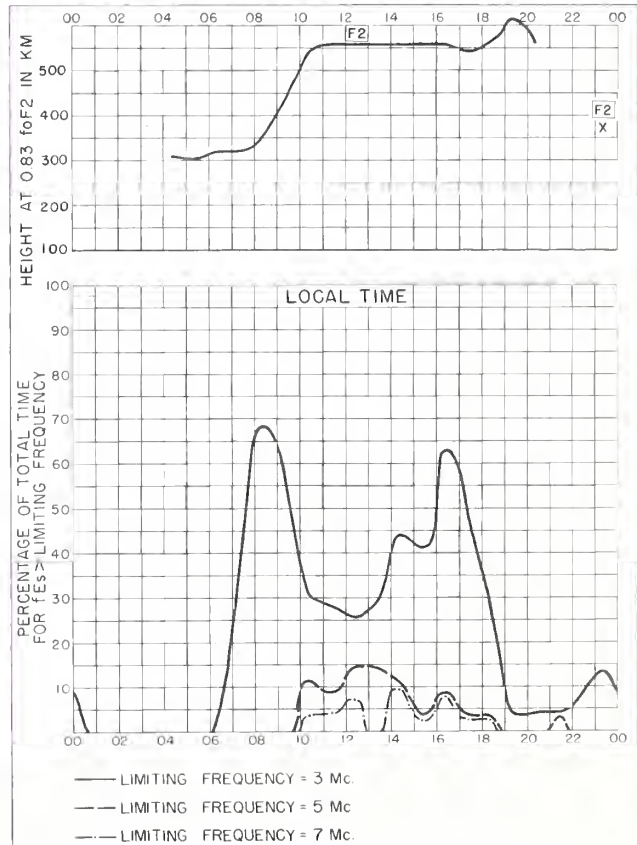
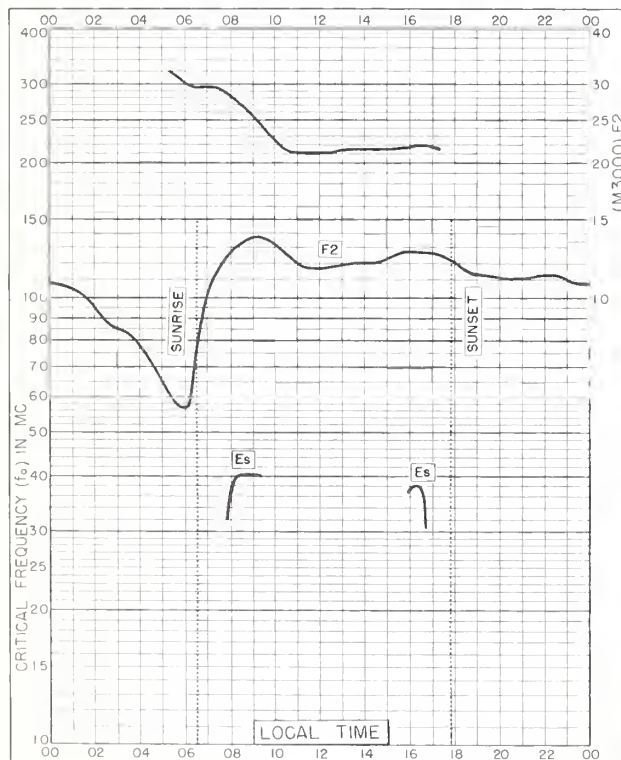
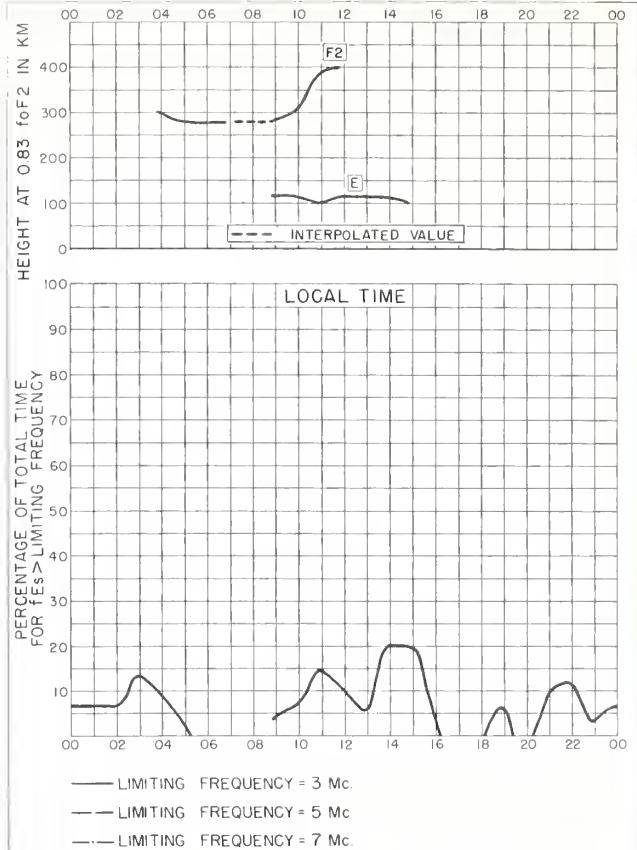
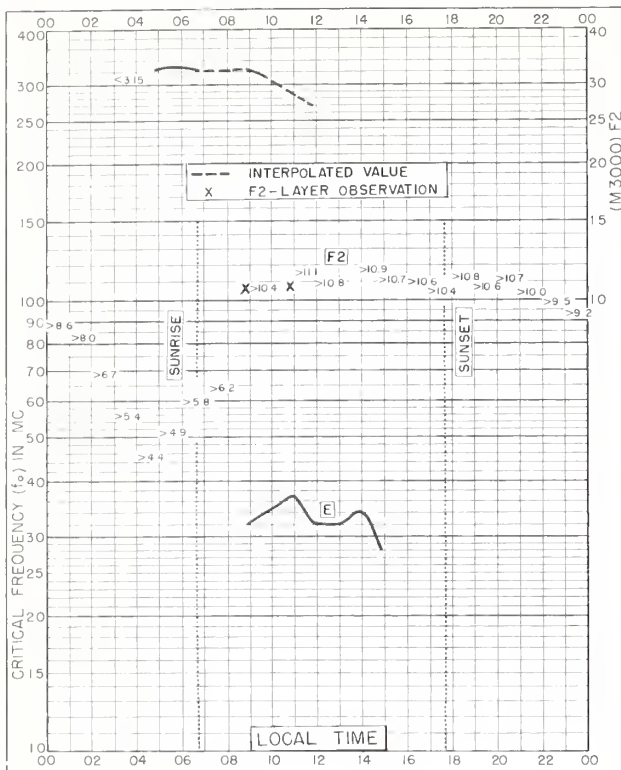


Fig. 123. CALCUTTA, INDIA

JANUARY 1959



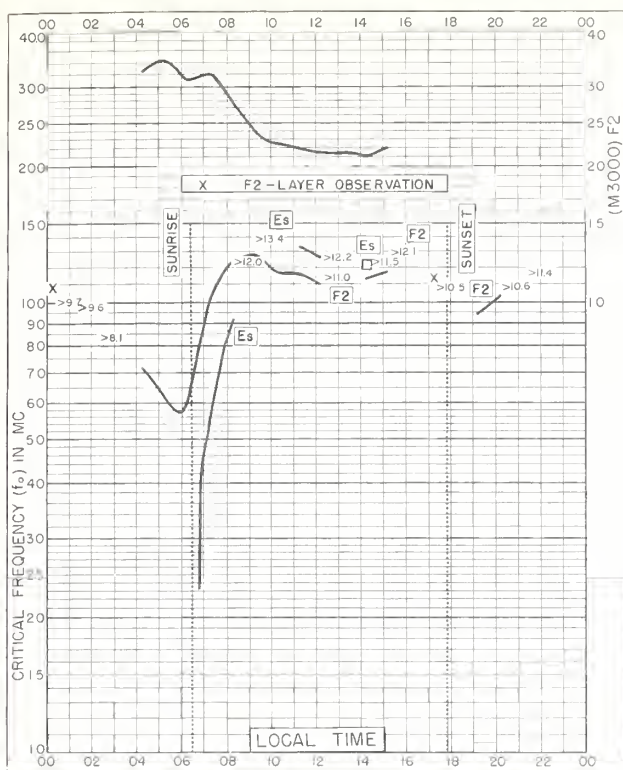


Fig. 128. TIRUCHY, INDIA
10.8°N, 78.7°E

JANUARY 1959

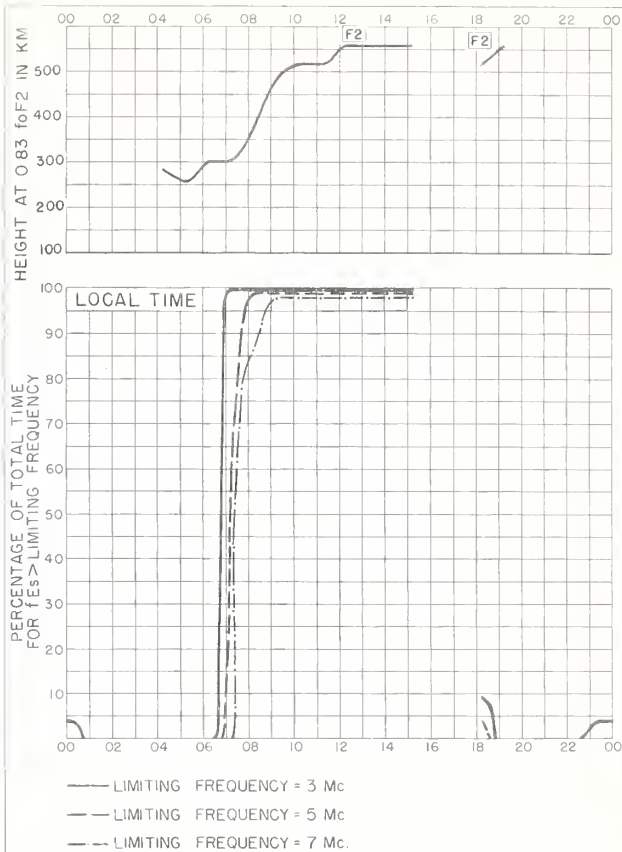


Fig. 129. TIRUCHY, INDIA

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Fig. 130. KODAIKANAL, INDIA
10.2°N, 77.5°E

JANUARY 1959

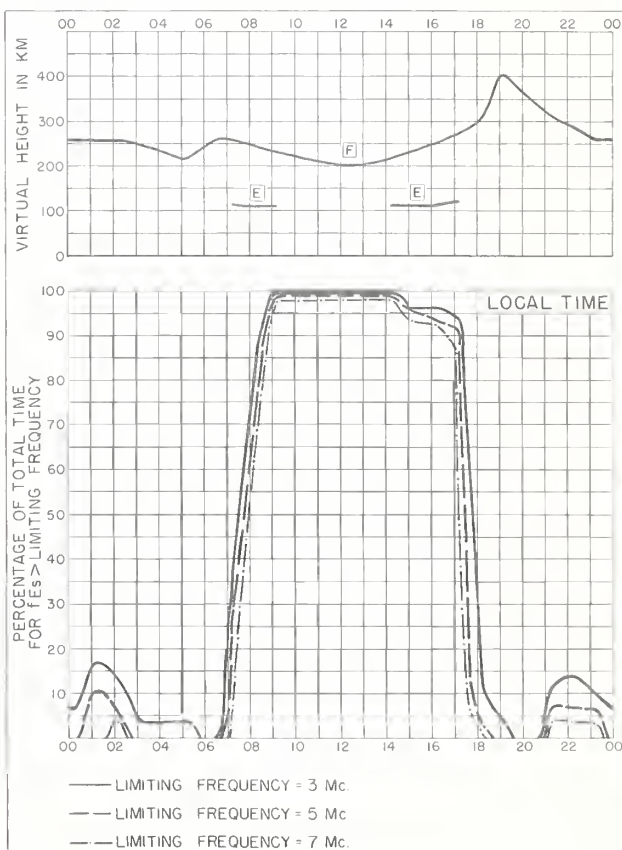


Fig. 131. KODAIKANAL, INDIA

JANUARY 1959

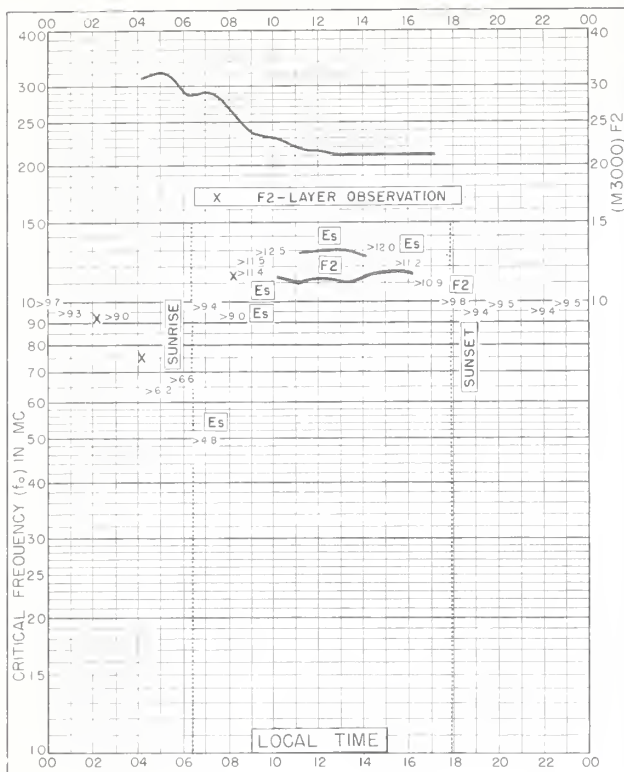


Fig. 132. TRIVANDRUM, INDIA
8.5°N, 77.0°E

JANUARY 1959

NBS 503

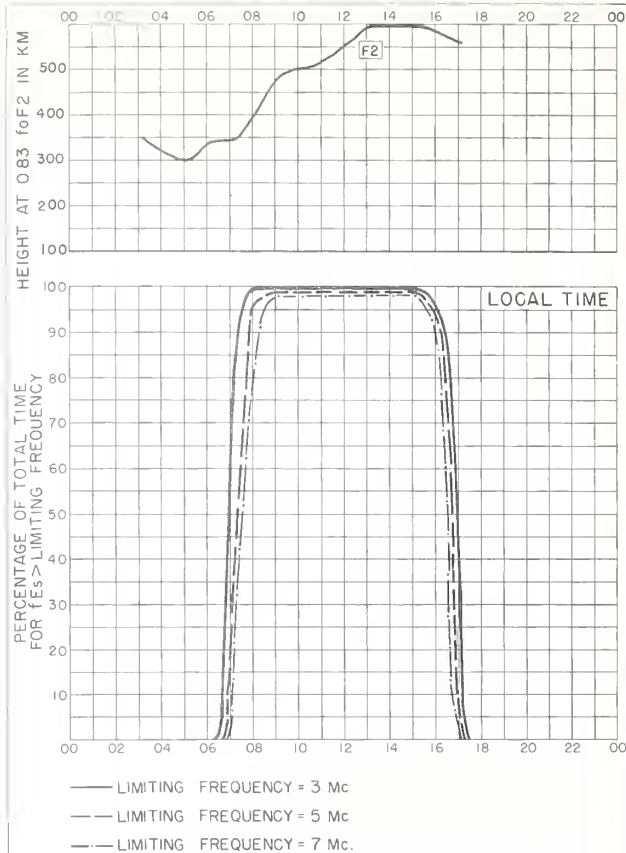


Fig. 133. TRIVANDRUM, INDIA

JANUARY 1959

NBS 490

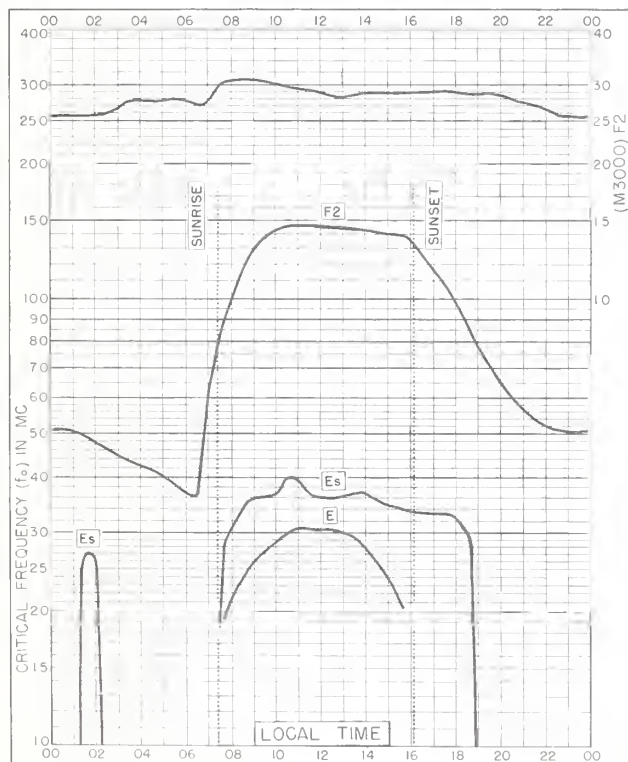


Fig. 134. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E

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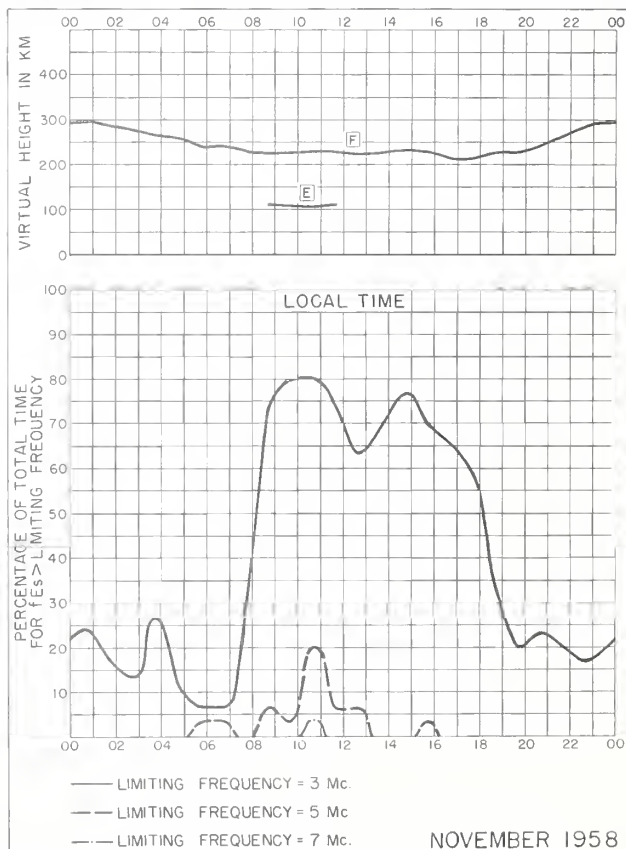
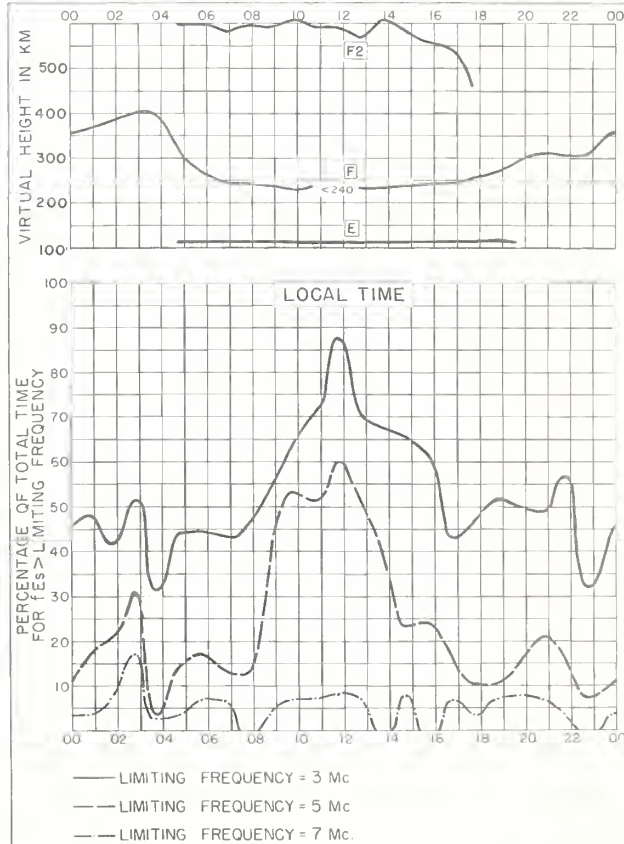
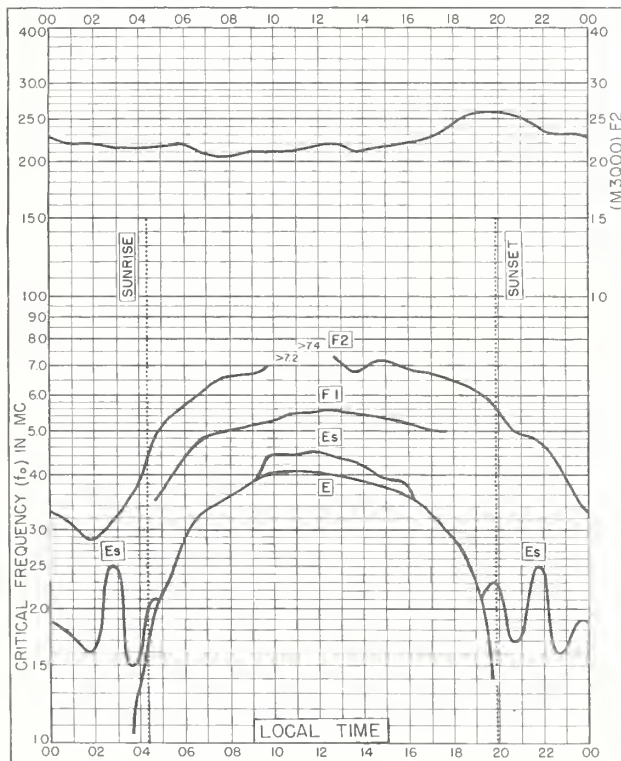
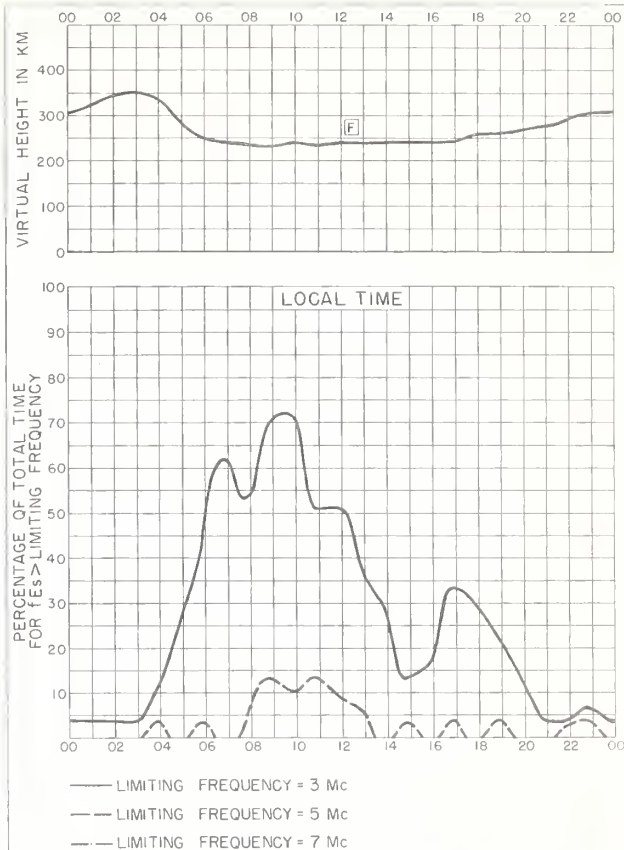
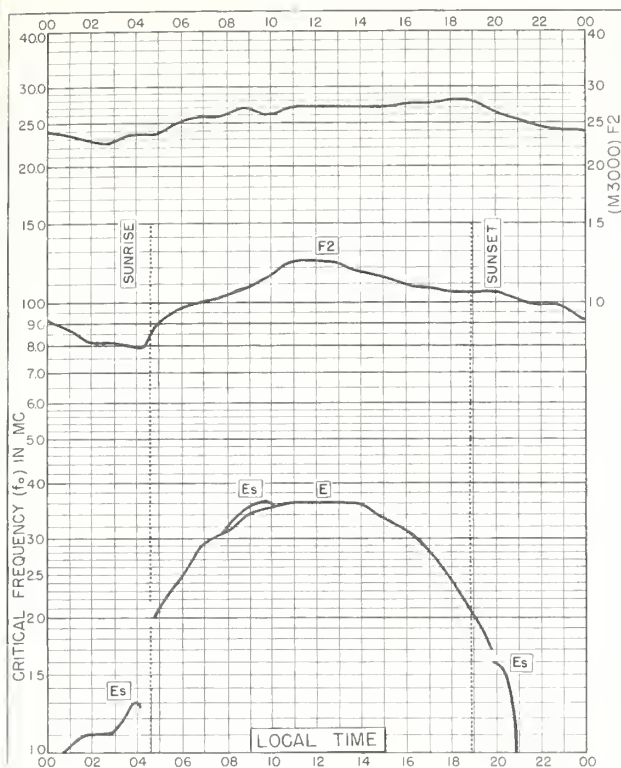


Fig. 135. LINDAU/HARZ, GERMANY

NOVEMBER 1958

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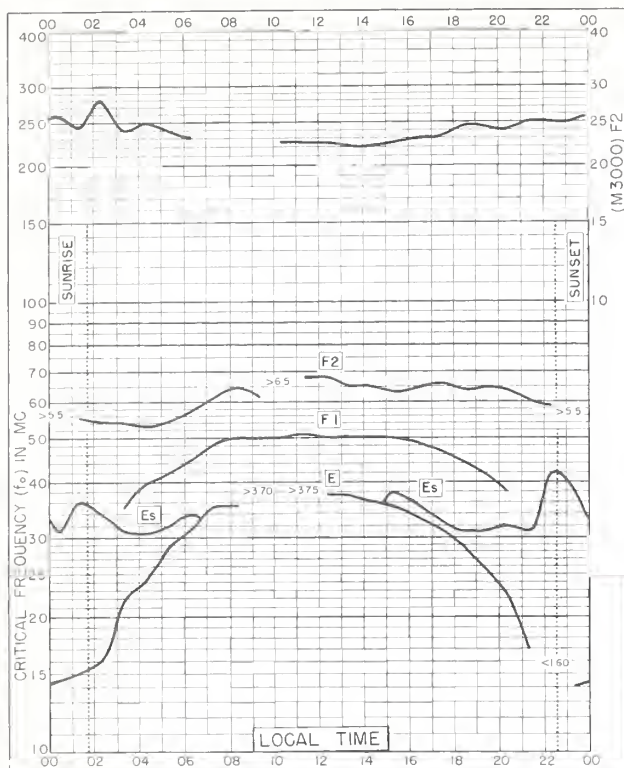


Fig. 140. TERRE ADELIE
66.7°S, 140.0°E

JANUARY 1958

NBS 503

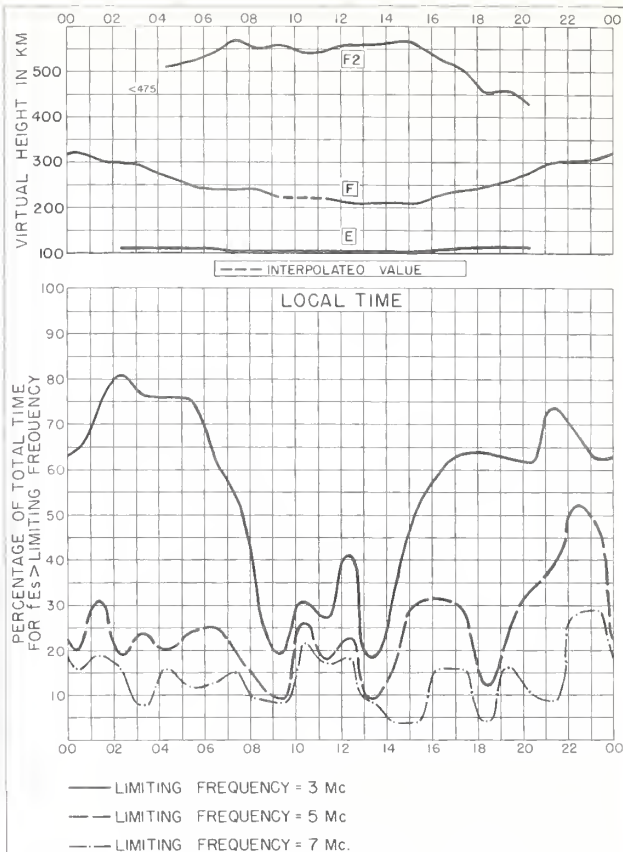


Fig. 141. TERRE ADELIE

JANUARY 1958

NBS 490

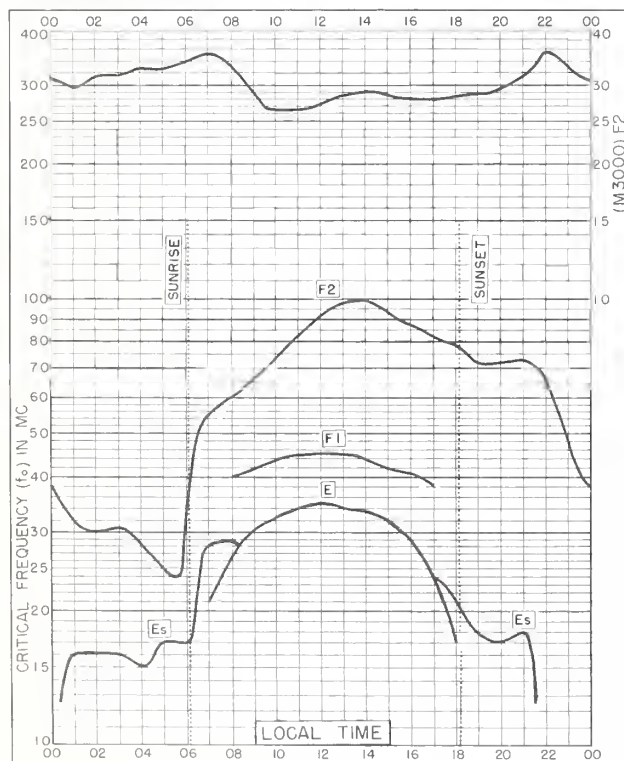


Fig. 142. LWIRO, BELGIAN CONGO
2.3°S, 28.8°E

JANUARY 1955

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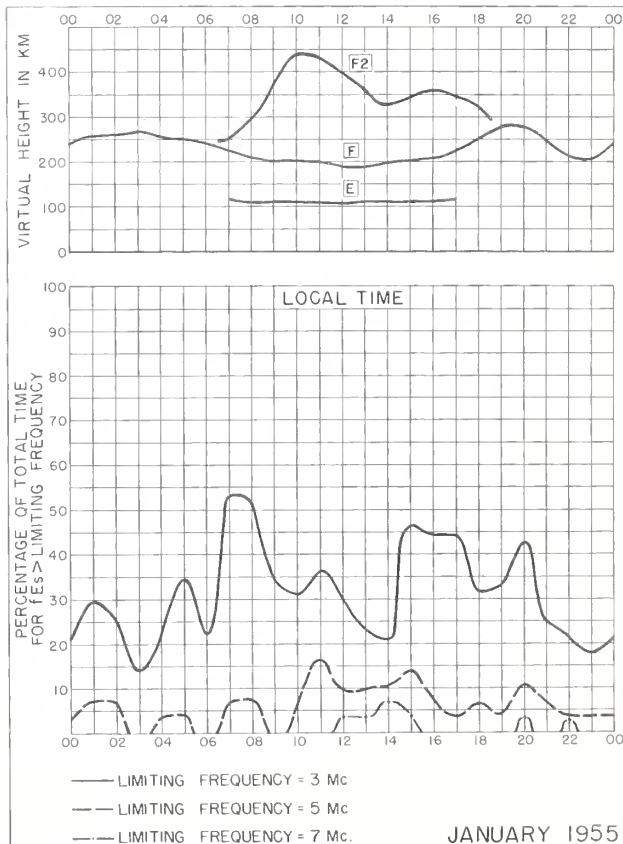


Fig. 143. LWIRO, BELGIAN CONGO

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(Part B). Solar-Geophysical Data.
Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic, or other radio propagation data.

Catalog of Data:

A catalog of records and data on file at the U. S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

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